A Model For The Examination Of Gender Within Domestic Spaces On The Northern Plains

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ABSTRACT

The prehistory of the North American Plains is an exciting and dynamic area of research within the discipline of archaeology. However, for the most part, the descriptions that archaeologists have assigned to the people who created the archaeological record in this region are either gender neutral or gendered male by default. In recent years Plains archaeologists have begun to explore how, where, and why gender representation can be found on the Plains.

This thesis seeks to further Plains gender research. Specifically, task differentiation by gender for the Blackfoot, a Plains contact period culture group, is examined and detailed in this study. The data compiled are used to set up a task differentiation model for the Blackfoot. How the Blackfoot conceptually structured the interior space of a tipi is also examined. The combined data are used to establish a model for the gendered distribution of space within a tipi. Once the model for the gendered distribution of space is established, it is tested against ten completely excavated tipi rings. The results of the spatial analysis indicate that gender can be seen archaeologically, within the features used in this study. Additionally, the findings of the analysis indicate that the best artifact classes to use when examining the gendered distribution of space are ceramics, lithics, and faunal material. Finally, recommendations for further testing of the model are made in order to confirm that the model can be used to examine gendered spaces at Plains tipi rings.

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CHAPTER ONE

INTRODUCTION

> Significant amounts of artifactual material have been found both inside and outside stone circles . . . These findings indicate that stone circle sites have unrealized potential as maps of household etiquette and therefore of ancient cognitive landscapes. The extent to which archaeologists can read these maps depends on their persistence, resourcefulness, and imagination (M. Wilson 1995:189).

The following thesis has been completed in order to build on previous gender informed research into understanding the use of space at Plains hunter-gatherer campsites, and particularly stone circles that are the remains of tipi structures. The first purpose of the research was to determine whether or not certain Plains cultures delineated tasks and space by gender. Once this was established, a model was set up in order to test if the cultural manifestations of gender (gender processes) could be seen in the archaeological record at tipi rings. The research was structured to build on two earlier models. The first model was the task differentiation model first proposed by Conkey and Spector (1984) and implemented by Spector (1983; 1985; 1991; 1993; 1998a; 1998b). The second model was proposed and used by Oetelaar (2000) to examine the interior spaces of tipis. This model was originally established to examine structure and symbolism within Plains tipi rings and was used as the foundation for this study. In order to specifically examine gendered spaces a similar but alternate model has been established for the spatial analysis completed as part of this thesis. The model for gendered spatial distribution within a tipi that has been established in this thesis is specific to Blackfoot culture and is based on Blackfoot task differentiation as identified through research completed for this thesis.

Chapter Two details the history of tipi ring research on the Plains, from its beginnings where it was established that some stone circles were the remains of conical house structures to the present where there is a renewed interest in tipi ring research. This current research direction is generally an attempt to understand how the spaces within the campsite and the tipi were structured and utilized by their inhabitants. Various research approaches and methodologies that have been established for tipi ring research are also presented and discussed in Chapter Two.

Chapter Three presents the theoretical basis for gender research at habitation sites on the Plains, as utilized in this study. The concept of gender is introduced and defined as terminology that is used to describe the culturally constructed notion of one's role in a culture, which is different than one's biologically determined sex. Archaeological feminist theory and the concept of engendered archaeologies are presented as applied to this study and serve as the foundation for the engendered research that was undertaken in the analysis. A brief history of intrasite and household spatial analysis serves as the introduction to the engendering of household spaces. Finally, four studies that specifically set out to engage in an engendered spatial analysis of northern Plains archaeological campsites are presented. The methodologies of these studies were used to organize and establish the methodology for the research and analysis completed for this thesis.

Chapter Four contains the results of the ethnographic, historic, and modern cultural research for the Blackfoot culture group. The research that was conducted in this section of the thesis was used to set up a task differentiation model for the Blackfoot. This model was then used to determine which gender would most likely be engaged in certain activities both at the campsite as a whole and within the tipi itself. This research was also able to determine that, for the Blackfoot culture group, the spaces within a tipi were segregated by gender. These data indicate that there was a certain structure to the domestic spaces within a Blackfoot tipi and that this structure was based on the gender of the individual inhabitants of the tipi.

Chapter Five presents the spatial analysis completed for this study. The history of the archaeological sites, location of the sites, exploration and excavation methodologies used at the sites, and analysis methodologies used to catalogue the archaeological data recovered from the sites are presented. The model of gendered spatial distribution that has been established through this study is presented along with the methodology used for the spatial analysis conducted in the study. Specific details are outlined for each site and feature used in the spatial analysis. The results of the spatial analysis are then presented.

Chapter Six is a discussion of the results of the spatial analysis. The results for each feature are summarized by site and then compiled. The discussion of the combined results examines the validity of the model, based on the results of the spatial analysis. Then the results of the spatial analysis are presented by artifact class. These results are examined and the validity of each artifact class for engendered spatial analysis at Plains campsites is discussed.

Chapter Seven provides a summary of the research presented in the thesis. From the findings of this study, conclusions are drawn as to the validity of the model that was established and tested in this thesis. Additionally, the implications for future engendered research at Plains campsites are presented and discussed.

CHAPTER TWO

PAST AND PRESENT DIRECTIONS IN PLAINS TIPI RING RESEARCH

2.1 Introduction

The Plains of North America are dotted with stone circle features that are known archaeologically as tipi rings. Tipi rings are the Plains equivalent of house foundations, as the stones once held down the hide cover of a conical tipi. However, there are many boulder and stone circle features on the Plains that were not utilized to hold down a tipi cover. These boulder features may have been associated with sun dance rituals, with vision questing, may be medicine wheels, or may have served any number of other functions. Additionally, a stone circle that once served to hold down a tipi cover may have been altered for another use after it was no longer associated with a tipi.

The intent of this chapter is to explore the history of tipi ring research, as well as some of the present directions of tipi ring research. This will begin with the early discussions of whether or not any of these features had ever been associated with a tipi. Then the scientific research of the 1970s, 1980s, and 1990s will be explored; the research of this period served to prove the association of certain stone circle features with former tipis. Many of these studies not only describe the rings but also have allowed for some inferences into the former tipi structure. After that discussion, the current direction of tipi ring research will be discussed to illustrate how the research is being expanded to investigate the individuals who inhabited the tipis.

2.2 The History of Tipi Ring Research

Archaeological tipi ring research began in earnest in the late 1950s and early 1960s predominantly through the research efforts of Thomas Kehoe (1958, 1985 [1960], 1961). During this period T. Kehoe published three articles, *Tipi Rings: The "Direct Ethnological" Approach Applied to an Archaeological Problem* (1958), *Stone Tipi Rings in North-Central Montana and the Adjacent Portion of Alberta, Canada: Their Historical, Ethnological, and Archeological Aspects* (1985 [1960]), and *Stone Tipi Rings* (1961). In these publications, T. Kehoe (1958, 1985 [1960], 1961) addressed the debate over the possible uses, functions, and stylistic differences of stone circles. In addition, he used an ethnoarchaeological approach to determine which of the boulder features had been used to anchor tipis, leaving other boulder features and alignments for later discussions.

T. Kehoe was not the only archaeologist concerned with the stone circle features that dot the northern Plains, in both Canada and the United States. Mulloy (1960:2) stated that,

> There is a good deal of confusion about these most interesting archaeological manifestations. They are usually regarded as tipi sites, with the idea that the stones were used to hold down the hide covers. . . . Some of the circles possibly have this origin, but the writer is strongly convinced that after having observed several thousand examples in the Montana-Wyoming area that the vast bulk of the stone circle complex has nothing whatever to do with tipis or any other kind of habitation site.

Similarly, Malouf (1960, 1961, 1966) felt that, while some stone circle features could be attributable to the remains of habitation sites, many other stone features had other uses. He cautioned that while boulder rings may, archaeologically, look similar these similarities did not preclude their having had the same function while in use. He stated,

> Conclusions based on present evidences strongly are in favor of a domestic origin for stone circles known as tipi rings in the Plains. Their size, form, and location together with the artifact association are too strong to deny. Historic accounts and ethnographic data support these archaeological conclusions. Since there are several types of stone circles having different purposes and functions, a general term is needed to refer to all forms. For this purpose Stone Circle is used. Stone circles may be identified as tipi rings when the evidence suggests the circle was connected with a conical, skin-covered dwelling [Malouf 1961:388].

Quigg (1981:48, 66) later reiterated this assertion when he suggested that the term tipi ring was too specific and that such features should be termed stone circles until such time as they are scientifically proved to be the remains of conical tipis; only then should they be termed tipi rings. At approximately the same time Finnigan (1982) devised a set of criteria to aid in discerning tipi rings from other stone circle features. According to Finnigan, a stone circle can be defined as a tipi ring if it falls within the following five criteria:

> 1) the shape does not deviate significantly from a circle;
> 2) there are no interior stone features that would render the interior of the tipi ring uninhabitable unless they are clearly a post-use modification;
> 3) the inside diameter falls between 2.5 m and 9 m;
> 4) the slope of the ground is less than or equal to 5°;
> 5) the ground surface is [was] dry and stable.

> There are also a number of other features, exposed through excavation, that will greatly strengthen the identification of a stone circle as the remains of a habitation. These include the remains of the tipi, evidence of a central hearth, and a clearly defined living floor [Finnigan 1982:4-5].

However, before these qualifications had been defined, the research had first gone through a descriptive period. Through the 1960s and 1970s archaeologists had begun to examine stone circles, developing, testing and refining many methodologies which are still used today. During this period, tipi ring research mainly served to record tipi ring sites and to develop excavation and reporting techniques (Aaberg 1975; Adams 1978; Brasser 1976, 1982; Calder 1979; Flayharty and Morris 1974; Keyser 1979; Quigg 1978, 1979; Ranere et al. 1969; Reeves 1983). Of importance were observations that, due to the limited nature of occupation length by mobile hunter-gatherer groups, a definable, densely packed, living floor surface was often not present. It was discovered that at many stone circle sites artifact concentrations corresponded with the lower extent of the ring and hearth rocks (Flayharty and Morris 1974:163). From this observation it was concluded that these rocks had been placed on the surface at the time of occupation and that their lower extent could indicate the surface of the living floor (Flayharty and Morris 1974:163). By synthesizing a number of studies that had previously been undertaken in Alberta, Quigg (1979) was able to show that this assumption held true for surface rings and that with careful stratigraphic control buried rings could also be uncovered.

In the late 1970s, 1980s and much of the 1990s archaeologists continued to refine tipi ring excavation and reporting techniques and began to implement more scientific methodologies into their research. For a more detailed look at this research, the author directs the reader to the following sources: Aaberg 1983; Abbott 1988; Brumley 1983, 1990; Brumley and Dau 1988; Burley 1990; Dau 1981; L. Davis 1983a, 1983b; W. Davis 1983; K. Deaver 1983, 1989; Dormaar 1976, 1981, 1990; Finnigan 1980, 1981, 1982, 1983; Finnigan and Johnson 1984; Fredlund et al. 1985; Frison 1983; Gragson 1983; Grant 1983; D. Hanna 1991; Heitzmann 1983; Hovde 1983; Janes 1989a, 1989b; T. Kehoe 1983, Kingsbury and Gabel 1983; Krozser and Hjermstad 1995; Loendorf and Orser-Weston 1983; Mobley 1983; Morris 1989; Morris et al. 1983; Quigg 1981, 1983; Quigg and Brumley 1984; Reher 1983; Roll 1981a, 1981b; F. Schneider 1983; Scott 1980; C. Smith et al. 1995; M. Smith 1974; Tratebas 1983; VanDyke et al. 1991; VanDyke and Head 1983; Vickers 1986; White 1998; J. Wilson 1984; M. Wilson 1983.

The important findings and qualifications of these research programs have been to describe: 1) the position of the campsite and individual tipis within camps, 2) size of the tipi, 3) location of the door, 4) seasonality of occupation, 5) presence or absence of a hearth, and 6) period of use. This research indicates that campsites were preferentially located on hilltops and on elevated terraces in the spring and summer, potentially in order to avoid flooding. Such warm season camps were also preferentially located on these elevated areas in order to allow breezes and winds to circulate through the camp. This would have been beneficial in keeping insects away from camp. The raised locations would also have enabled an undisturbed view across the surrounding prairie for protective purposes (Frison 1983:84-85; T. Kehoe 1985 [1960]:433). In the winter, preferred camp locations were along creeks, in valley bottoms, and in sheltered valleys, to protect the inhabitants against harsh winter winds (Frison 1983:84-85; T. Kehoe 1985 [1960]:433).

The internal organization of campsites appears to have taken many forms. Archaeological evidence supports the assertion that campsites could contain from one tipi to hundreds of tipis. It has been reported that individual tipis within a camp could be organized into a triangle, a single row, a double row, a V arrangement, a semi-circle, a circle, or they could be haphazardly situated throughout a camp (Adams 1978:16; Frison 1983:84-85; T. Kehoe 1958:864, 1985 [1960]:442).

In terms of the tipi rings themselves, the size of the ring can be used to approximate the size of the living floor of the tipi while it was in use. Originally T. Kehoe (1958:871-872) suggested that stone circles with a diameter of between 2 m to 9 m could be considered tipi rings, with the average tipi ring being approximately 5 m in diameter. Finnigan (1982:3), in order to allow for consistency of reporting, later qualified this to refer to the 'inside diameter' of a ring, with the dimensions set at a minimum of 2.5 m and a maximum of 9 m.

With reference to tipi ring size, T. Kehoe (1958, 1985 [1960]) suggested that the size of Plains tipis changed over time. He felt that smaller tipis had been common in pre-horse times and that larger tipis came into use with the introduction of the horse. Further research has suggested that this was not the case. As reported by Quigg (1979:264, 1981:56-59), there was virtually no change in average tipi ring size over time, from approximately 5000 B. C. to the early 1900s A. D. The average tipi ring from approximately 5000 B. C. to 700 A. D. ranged in size from 4.1 m to 6.3 m, while from approximately 200 A. D. to 1850 A. D. rings ranged in size from 3.4 m to 7.0 m. In the Historic period (post 1850 A. D.), rings ranged in size from 4.4 m to 6.0 m (Quigg 1979:264, 1981:56-59). Baldwin (1995) also found that tipi ring size on the northern Plains remained remarkably constant from approximately 2000 B. C. to the Historic period, with an increase in size during the Besant Phase (approximately 100 B. C. to 800 A. D.) that reverts back starting with the Avonlea Phase (approximately 200 A. D.). Based on the above and similar data provided by other authors, it has been proposed that the idea that tipis increased in size with the introduction of the horse be discarded. An alternative hypothesis is that tipi, and therefore ring size, was a reflection of the relative wealth of the occupants and an indication of the number of occupants in the structure (L. Davis 1983b:273; Quigg 1981, 1983; M. Wilson 1983). Therefore, the larger the ring was the greater the wealth of the family and/or the greater the number of individuals inhabiting the structure.

T. Kehoe (1958:871, 1985 [1960]:467) reported that, through ethnographic observation, he was able to determine that there is often minimal displacement of the individual ring rocks during removal of the tipi cover. To date no conclusive negative evidence has been presented to adequately challenge this statement. Therefore, the archaeological tipi ring can be considered an accurate approximation of the actual living floor while the tipi was in use. However, after use many factors could serve to alter the ring. Changes could be made to the feature through reoccupation of the ring, removal of rocks for another purpose, addition of rocks in the form of spokes and/or cairns, and disturbance by scavengers, grazing ungulates, plowing, construction, and the natural processes of erosion and frost action (Finnigan 1982:46-47, 1983:18-23).

The location of the doorway of the tipi is critical for any discussion of how the space of the structure was used. In order to model the seating/sleeping arrangement of the inhabitants and the location of internal activities, the entrance of the structure must be located. This allows for a reference point from which to orient the spatial structure of the living floor. As stated by M. Wilson (1995:187), "Orientation is a key to the understanding of artifact and feature distributions at stone circle sites. Gender asymmetry of distributional patterns would be in reference to a line anchored by the doorway and central hearth". For the spatial analysis of gendered patterning of artifact densities that has been undertaken in this study, identifying the most probable location of the doorway to the original structure was critical.

Ethnographic information indicates that the preferred location for the doorway was facing to the east, to face the rising sun (Campbell 1915:689, 1927:97-98; Dorsey 1889:175; McClintock 1936:2; Mooney 1910:759). However, on the northern Plains the sun does not rise at the cardinal direction of east; instead it rises more toward the southeast. Therefore, while the ethnographies state that the preferred location of the door was to the east, this has more recently been qualified to assert that the doorway would open 'toward the rising sun' (Brumley 1983:177; L. Davis 1983b:263-265; A. HungryWolf

1972:19; T. Kehoe 1985 [1960]:445; M. Wilson 1995:179). Quigg and Brumley (1984:12) also noted that, in some cases, this doorway alignment may have had practical purposes. In their research concerning the Gros Ventres, they stated that the doorways to tipis “faced toward the east-southeast, from utilitarian consideration, since the prevailing winds were from the northwest in winter and west in summer” (Quigg and Brumley 1984:12). Similarly, McClintock (1936:2) stated, “The door always faced the east, because the prevailing winds came from the opposite direction.” The above information indicates that the most logical point at which to begin a doorway location assessment for northern Plains tipi rings is in the southeast.

When attempting to assess where the door to the structure may have been, many archaeologists assume that the entrance can, in some cases, be located based on the observation of a gap in the ring rocks (see for example: Calder 1979:8-10; T. Kehoe 1985 [1960]:444; Oetelaar 2000:45; Quigg 1979:263). This, it is presumed, will indicate the area of the tipi where rocks were not required to hold down the cover. However, this approach will not always be applicable as there appears to have been two styles of tipi door used on the Plains. These were the ovoid shaped door, which did not reach the ground, and the triangular shaped door, which did reach the ground (Adams 1983:8; Brumley 1983:177; T. Kehoe 1985 [1960]:444; Quigg and Brumley 1984:12). Presumably when the doorway was oval in shape the ring rocks may not have had a doorway gap, whereas, with the triangular shape it may have been impractical and unnecessary to have ring rocks in the doorway. Therefore, while a noticeable gap in one section of the tipi ring may be observed, this should not be the only factor used to determine the location of the entrance to the tipi.

Other factors that may have influenced the placement of the entrance to the tipi are wind direction, location of valley wall, and camp organization. As indicated by Grinnell (1901:665) the door may have opened downwind; "The lodge is always pitched back to windward, and the inclined poles in front resist the force of the wind, so that the lodge can not be blown over." If the back of the tipi was faced to brace the structure against the wind, then the doorway would have been located on the downwind side of the structure (Brumley 1983:177; Brumley and Dau 1988:133; Campbell 1915:691; L. Davis 1983b:263-265; Quigg and Brumley 1984:77). Wind direction, even prevailing wind direction, during habitation can be difficult to recover. One method that has been proposed in order to determine the rear of the tipi in situations where the structure has been braced against the wind is by assessing the portion of the ring with the densest ring rock loading (Brumley 1983:177, 1990:29; Brumley and Dau 1988:133; Burley 1990:350; L. Davis 1983b:263-265; Finnigan 1981).

The long axis of the doorway is another observation which may help to assess the location of the doorway. It has been noted that the floor of a tipi was not circular but was somewhat ovoid in shape, with the long axis of the oval on the doorway axis (Finnigan 1982:97-98; Malouf 1960:5; Oetelaar 2000:45; Quigg and Brumley 1984:16-17). However, it has also been noted that often there are only a few centimetres separating the long from the short axis (Brumley and Dau 1988:133). Therefore, this method of finding the doorway of the structure must also be used in conjunction with other methods.

Archaeologically locating interior hearths must be done carefully as not all hearths were delineated by a ring of rocks. Some hearths are only discernible as an ash lens, as a soil stain or by a concentration of fire broken rock (Adams 1978:25, 30, 1983:11; Brumley 1983:83-84, 178; Calder 1979; L. Davis 1983b:251-252; Finnigan 1982:250-254; Flayharty and Morris 1974:163; Hovde 1983; T. Kehoe 1985 [1960]:445-446; Kingsbury and Gabel 1983:324; Quigg 1979:263, 1981:61, 1983:311; VanDyke and Head 1983). The physical location of interior hearths should be either directly in the centre of the ring, or slightly to the front and closer to the door, on the front to back axis of the ring (L. Davis 1983b:263; T. Kehoe 1985 [1960]:445; Mooney 1910:759; Oetelaar 2000:37). However, Quigg and Brumley (1984:16) have suggested that the interior hearth may be located slightly toward the back of the structure. Therefore, hearth position can not be used on its own to determine doorway location. Hearth location can, however, be used to determine the approximate centre of a tipi ring. This is especially useful for tipi rings that are not clearly defined and have scattered ring rocks.

One strong determinant of doorway location may be geographical features. If a tipi has been placed within close proximity to such natural features as a slope or a valley wall then it would not make practical sense to have a doorway that opens against a natural barrier. Additionally, campsite structure can affect the placement of a doorway. In certain situations, such as camp circles and double linear rows, doorways may have faced inward toward the center of camp (Oetelaar 2000:37).

Finally, it has also been suggested that a concentration of artifacts which appear to flow from the interior space to the exterior space may be an indication of doorway location (Brumley and Dau 1988:203; Quigg and Brumley 1984:77). Based on the above information, the doorway to a tipi may be difficult to uncover. However, as already noted, recovering the location of the doorway to the structure is critical when assessing the spatial patterning of the interior space of a tipi. The position of the door must be determined prior to assessing internal spatial patterning.

The season of occupation, as indicated above, may be determined by the location of the campsite (e.g., warm season sites in elevated areas, cold season sites in protected areas (T. Kehoe 1985 [1960]:433)). However, these data should be used only as an indication of seasonality and should be combined with other data in order to determine season of occupation. The density of artifacts has been used by various researchers to determine seasonality (Adams 1978:32; Calder 1979:27; Oetelaar 2000:45, 2003:115). The rationale used here is that during the summer hunter-gatherer groups were more mobile than in the winter. Therefore, based on the shorter length of occupation, warm season occupations would contain fewer artifacts than cold season occupations. In addition, warm season camps may contain the remains of certain activities, such as fresh berry processing, which can only be undertaken during the summer berry season. Another indicator used to determine seasonality of occupation is the presence or absence of bison fetal bone, with its presence indicating a winter occupation (Adams 1978:32; Quigg 1979:264).

Yet another indicator of seasonality is the presence or absence of an interior hearth. It has been presumed that tipi rings that contain interior hearths were occupied during cold periods (Calder 1979:27). However, as suggested by Hovde (1983:33), some rings may have had both internal and external hearths, possibly indicating spring or fall occupations with the internal hearth used for cooking and heating during the cooler parts of the day and the external hearth used during the warmer parts of the day.

Dating tipi ring campsites is generally completed absolutely through the radiocarbon or AMS dating of samples recovered from excavation or relatively based on projectile point stylistic attributes. The presence or absence of Contact period artifacts can also be used as a method of dating site occupation. Individual tipi rings may also be attributed to the same occupation period based on their placement and clustering within a site or specific area (Calder 1979:18-19). Additional information is occasionally recovered that will allow for the placing of specific rings, within a site, to a single occupation. This is generally done through the recovery of artifacts made from the same material, such as lithic reconstruction of a single core from flakes that were recovered from more than one tipi ring (L. Davis 1983b:270; Roll 1981b:80).

The above discussion has generally focused on the interior of tipi rings. However, it has been suggested that, at some campsites, the density of cultural materials will be greater outside of the tipi than inside and that the structural organization of the household will extend to the immediate area outside of the tipi (S. Deaver 1989; Oetelaar 2003; Quigg 1979; M. Wilson 1995). Therefore, these areas should be examined just as thoroughly as interior areas (Krozser and Hjermstad 1995). Additionally, the distribution of features, activity areas, and artifacts that are located outside of the tipi ring can be used to inform researchers as to doorway location, seasonality of occupation, and period of use.

2.3 The Present Direction of Tipi Ring Research

Beginning in the 1990s and continuing to the present archaeologists began investigating and theorizing about more than just the tipi rings and tipi structures. They have begun to attempt to model the conceptualization and utilization of the inside space by the original inhabitants of the tipis (Arnold 2004; Brumley and Dau 1988; S. Deaver 1989; Hull 1983, 1987; Oetelaar 2000, 2003, 2004; Peterson 1997; M. Wilson 1995; M. Wilson and Mckinnon 1989). However, in order to understand how the inside space of a tipi was conceptualized and utilized by its original inhabitants one must first examine the tipi ring archaeologically.

All of the methodologies, hypotheses, data, and conclusions discussed in the previous section can be combined and used to investigate how the spaces within both the tipi and the campsite were conceptualized and used by the original inhabitants. On the northern Plains the space inside a tipi and in the campsite was ordered and those who lived there knew which spaces they could access and which were restricted. Ethnographic data indicate that the space within the tipi was discretely ordered and that the tipi had at least two main features that may be archaeologically identifiable. These two features are the door and the central hearth. As discussed above, these features were aligned on the central axis with the door as the origin and the hearth roughly in the middle of the living floor. If these features can be located, they can be used to orient the researcher with regard to the location of various spaces within the tipi.

Oetelaar (2000) has asserted that, when inside the tipi, women utilized the left side, while men utilized the right side. Starting at the rear of the tipi, the seating and sleeping platform of the female and male heads of the household would be situated directly opposite the door. In this space they would sleep, eat, conduct ceremonies, and manufacture and repair items of material culture. The space immediately to the left of the male head of the household was reserved for the next highest ranking male of the household (or next highest ranking male guest) and to his left was the next highest ranked male. The space on the right side of the male head's position was reserved for the female head of the household; here she would engage in many activities, such as sleeping, eating, engaging in ceremonial activities, cooking, sewing, and manufacturing and repairing items of material culture. To her right would be the space reserved for the next highest ranking female of the household (or the next highest ranking female guest). Therefore, as one entered a tipi the right side would have been reserved for the men of the household and the left side would have been reserved for the women of the household.

There is also ethnographic evidence to suggest that items of material culture were stored within the tipi according to ownership. Those items that belonged to men were to be found on the right side, while those that belonged to women were to be found on the left side (Brasser 1976:34; Finnigan 1982:33; Grinnell 2003 [1892]:199; Oetelaar 2000:37-38, 2003:115, 2004:129-130; Quigg and Brumley 1984:16; M. Wilson 1995:185-186). This organization of space should be recognizable archaeologically. If the space within the tipi was in fact segregated, based on gender, then the residues of specific gendered activities should also be spatially segregated.

To date, few archaeological studies have addressed this issue or undertaken the careful examination of these areas to identify gendered activities. Brumley and Dau (1988:205-206) suggested that many activities could have been engaged in at the same loci and that more than one set of tools could be used for certain activities. These factors serve to complicate the archaeological recognition of gendered activity spaces. However, Brumley and Dau (1988:205-206) also indicated that their research detected activity patterning that was visible archaeologically. They felt that further research would lead to the creation of methodologies that would allow the archaeologist to elicit gendered activity patterning from the archaeological record.

2.4 Summary

The information presented above gives an overview of the type of research that has been conducted on tipi rings on the northern Plains. This research began in the late 1950s and early 1960s as archaeologists began to define which boulder features could be considered former tipi sites and which could not. Through the 1970s, 1980s and 1990s much of the research into tipi rings served to further define which features were in fact tipi rings, what their spatial distribution was, and how to scientifically quantify such sites.

At the present time, some researchers are moving tipi ring research to a more social and individualistic level. These researchers are attempting to define how the space within the tipi and the campsite was framed and utilized by its occupants. This research will ultimately allow for a better understanding of how the individuals who occupied the sites under investigation conceptualized and utilized the space around them. The research that specifically focuses on defining how space was segregated on the bases of the gender of individual occupants will be examined further in the following chapters.

CHAPTER THREE

INVESTIGATING GENDER AT PLAINS HABITATION SITES

3.1 Introduction

In order to find gender differentiation within the archaeological record one must begin looking in places where it can be assumed that gendered performance was present. Therefore, campsites are an excellent place to research gender because all actors in a social group will at one time or another use the spaces within a campsite. While many activity area studies in Plains archaeology have focused on large kill sites and processing sites, few have focused on campsites, in part because, when compared with large kill and processing sites, comparatively fewer archaeological remains have been recovered in campsites. This has led to a greater degree of difficulty in drawing conclusions regarding the activities carried out at these sites. However, studies completed by Guenther (1991), Hughes (1991), Oetelaar (2000, 2003) and Arnold (2004) suggest that northern Plains campsites, specifically tipi ring sites, do contain the archaeological data required not only to define activity areas within the space but also to determine the gender of those who used the space.

To date very few Plains archaeologists have focused on women's activities. This chapter will focus on synthesizing existing theories in order to establish a theoretical base which can be used to include women in interpretations of northern Plains archaeology, specifically within domestic space. This chapter will synthesize previous work and present multiple theoretical positions. The term gender will be defined, followed by an examination of feminist theory in archaeology. Then a task differentiation model for how to undertake an engendered archaeological investigation of northern Plains data will be presented. This will be followed by a theoretical discussion of spatial analysis, beginning with the history of spatial analysis in archaeology, proceeding to activity areas, household analyses, and a discussion of theories specific to engendering household spatial analyses. Finally, previous northern Plains engendered household research will be examined. The theoretical positions discussed in this chapter will be adapted in the next chapter in order to provide the analytical basis for this study.

3.2 Gender Studies in Archaeology

3.2.1 Defining Gender

In any discussion of gender and of engendering the archaeological record, the meaning of the term 'gender' must first be defined. In order to define gender the term must first be separated from biological sex. At the simplest level an individual's sex is biologically determined to be either male or female (for a more complex discussion see Hill 1998:101-102). For the purposes of this study biological sex will refer to the biologically determined sex of either male or female. Gender, on the other hand, is culturally constructed through the processes of enculturation and is moderated by various cultural constraints. The term gender therefore does not describe a 'natural' state of being; instead it is constructed through cultural processes (Roberts 1993:18; Whelan 1995:50; Wylie 1991a:48-49).

The term gender can be seen as acting as a cultural construct and control in three distinct, yet interrelated, avenues. Gender role "refers to the differential participation of men and women in social, economic, political, and religious institutions" (Conkey and Spector 1984:15). Gender identity, "refers to an individual's own feeling of whether she or he is a woman or a man" (Conkey and Spector 1984:15), or potentially some other gender manifestation beyond 'woman' and 'man'. Gender ideology "refers to the meaning, in given social and cultural contexts, of male, female, sex, and reproduction" (Conkey and Spector 1984:15; Wylie 1991a:48-49). Therefore, gender can, simultaneously, be defining and controlling an individual's actions within the cultural system as a whole, be constructed as a belief of who one 'is', and be reproduced symbolically within the context of cultural constraints. Gender identity and gender ideology both help to construct the gender role which an individual may participate in, while an individual's gender role determines the types of activities that an individual may engage in and where they may participate in those activities. From the viewpoint of archaeological investigation, the archaeologist will be examining the gender role of the inhabitants of a site.

To add to the complexity of gender manifestations, one's gender role may not always be static throughout one's life. In many cultures, various age grades also can be considered to exist within different genders and various individuals can perform gender outside of expected norms (Hill 1998:101; Joyce and Claassen 1997:3-4). The fact that cultures tend to have some type of gendered construction does not mean that such constructs will remain the same across time and space, both within and outside of any given culture group (Conkey and Spector 1984:16). Additionally, while some gender roles may be fixed within certain cultures, other roles may be fluid and at various times and places certain tasks could be completed by either gender (Conkey and Spector 1984:16).

In light of the above mentioned obstacles, which seem to stand in the way of defining gender as a neat package that can be seen, reproduced, and envisioned within the archaeological record, one could conclude that gender is impossible to locate archaeologically, especially considering that the individuals and/or culture groups who created the record can not be interviewed regarding their particular views on gender. Many researchers who engender archaeology have elected to define gender by looking for 'men' and 'women', while being aware that other gender manifestations may have been, and probably were, active within the assemblages that they are analyzing (Joyce and Claassen 1997:5). This, they assert, will allow for a more inclusive interpretation of the archaeological record, because without engendered analyses the past will continue to be gendered male by default (Joyce and Claassen 1997:5).

Perhaps as our understanding of gender, on a culture by culture basis, becomes more transparent we will be able to see gender and its various reflections in more detail. As our research and interpretations advance to such a level, we will be able to research gender not merely on the basis of whether or not we can find it but also under what circumstances gender variation and fluidity come into play and act on cultural processes (Francis 1991:79-80).

At this point in the evolution of engendered research on the northern Plains, the researcher who wishes to examine gender processes should specify that they are examining gender in the archaeological record, not sex. Sex is biological and can only be examined archaeologically with specific elements of human skeletal remains. Gender role, because it is culturally constructed and because archaeology studies the remains of cultural processes, should be archaeologically visible if gendered task and spatial differences can be located in the cultures under examination. Once task and spatial differences by gender have been established, the known cultural expectations of gendered patterning can be tested against the archaeological record.

3.2.2 Feminism in Archaeology

The catalyst for engendered research was the 1984 Conkey and Spector article *Archaeology and the Study of Gender.* This article is considered by many to be the beginning of feminist archaeologies. In their article, Conkey and Spector (1984) pointed out that even though many of the other sciences and social sciences had been dealing with feminist and gendered issues for at least two decades, archaeology had been slow to include feminist theories and engendered interpretations. They stated that within archaeology there was no "methodological or theoretical discourse on how to find gender in the archaeological record" (Conkey and Spector 1984:1-3). They also asserted that without a methodological and/or theoretical standpoint archaeology would continue to base its interpretations on ethnocentric and androcentric assumptions that were more exclusive than inclusive (Conkey and Spector 1984).

Conkey and Spector (1984) called for a reassessment of the archaeological record, one that was aware that not only are we as archaeologists rooted in ethnocentric and androcentric epistemological traditions but that many of our tools of analysis, such as ethnography, are similarly rooted. They also argued that the 'invisibility' of women in the archaeological record was due to the particular theoretical paradigms and research questions that had previously been applied to the archaeological record, not to women's absence in prehistory (Conkey and Spector 1984:5-6).

Since the Conkey and Spector (1984) article was first published there have been a number of conferences held and papers published that deal with how feminist theory might be brought into archaeology and where it and gendered archaeologies fit within current archaeological paradigms. Wylie (1991a, 1991b, 1996) has been one of the dominant voices in this discussion. Among many things, one of her most important contributions has been placing gender theory within the greater context of archaeological theory. Wylie (1991a, 1991b, 1996) has proposed that the issue of gender in the archaeological record enjoyed a florescence in the mid-1980s and early 1990s because the timing was right, in terms of the dominant archaeological paradigm in use at the time. She saw the New Archaeology as restricting gender research because it relied heavily on theories regarding cultural systems. However, during the 1980s there was a shift within archaeology that led to theoretical positions which challenged the status quo of the purely science based Processualism. With this shift and the advent of Postprocessualism came various archaeologies that allowed for multiple avenues of approach and analysis. It is within this framework that the individual in prehistory became more attainable, allowing for the extraction of gender from the archaeological record.

Other discussions regarding feminist theory in archaeology have centered on pointing out that the ethnocentric and androcentric basis of the discipline must be removed before engendered archaeologies can be truly inclusive as descriptions of past lifeways (Hill 1998:104; Hudecek-Cuffe 1998:10-11; Kornfeld 1991:1; Wylie 1991a:48, 1996:312). At the same time many advocates, rather than finding that new methodologies are required, have found that existing methodologies need only be modified and viewed through an inclusive lens, one that is aware of the inherent ethnocentric and androcentric biases embedded in much of the research (Wylie 1996:312).

With the knowledge that the lens through which archaeologists viewed the past was gender-biased, new research began to include gender and women in archaeological interpretations. This new aspect of archaeological investigation gave women agency and allowed them to be seen as valued and visible subjects within the archaeological record (Conkey and Gero 1991:22; Conkey and Tringham 1995:204; Hudecek-Cuffe 1998:10-11; Wylie 1991a:32; Yentsch 1991:259). However, with these investigations came the argument that gendered roles were often being assigned on the basis of modern western assumptions of what gendered roles were. Therefore, they had little value when linked to past cultures that may not have ascribed to the same gender ideologies (Hudecek-Cuffe 1998:10-11; Wylie 1991a:48-49). For this reason, assumptions about gendered roles had to be reanalyzed and past gendered assignments updated.

Feminist research in archaeology began to be critical of research that took the 'add women and stir' approach, contending that one cannot see the entire picture of past human lifeways while continually looking at each of its parts separately. Therefore, the movement within feminist archaeology has been to push towards inclusive interpretations that identify as many individuals as possible regardless of age, sex, gender, or status (Conkey and Tringham 1995:204; Wylie 1991b:22).

At this point in the development of feminist/gendered archaeologies some argued that a separate and definable theory of gender was required in order to undertake engendered research (Hudecek-Cuffe 1998:10-11). Wylie (1996:342-343), however, asserts that rather than build on a processual view of "general epistemic" knowledge, archaeology should take the issue of gender-inclusive research on a case by case and region by region basis, since gender is fluid and will manifest itself differently across time and space. In addition to the case by case stance, Hill (1998:118) asserts that a multivariate approach is necessary in order to confidently represent social organization and gender properly. She argues that using two or more independent lines of evidence in order to interpret gender roles and their presence in the archaeological record will create "a more inclusive perspective on the past than if only a single line of evidence was used" (Hill 1998:118).

Feminist archaeological theory has developed in the past two decades as a means by which feminist scholars attempt to highlight the inequalities that exist within the discipline, both within the archaeological record and for those who are archaeologists. The above examination has highlighted some of the issues which have emerged from discussions that deal with the archaeological record. The methods by which these theoretical implications are put into archaeological practice have become known as engendered archaeology. However, because conclusions are produced through multiple theoretical positions and research techniques, they may more aptly be termed engendered archaeologies.

3.2.3 Engendered Archaeologies

In their original work, Conkey and Spector (1984) proposed a possible method of analysis that could allow for the inclusion of engendered interpretations. The methodology they proposed represents a 'task differentiation' framework, which focused "attention on four interrelated aspects of task performance: the social, temporal, spatial, and material dimensions of each task undertaken by a given group" (Conkey and Spector 1984:25). Their framework focused on material goods and was rooted in a reinterpretation of the ethnographic record, which was used to inform the researcher as to the nature of the gendered division of labour within a specific group. Spector (1983; 1985; 1991; 1993; 1998a; 1998b) had already completed such an analysis with the Hidatsa and found that although the related ethnographies were both ethnocentric and androcentric she was able to move forward and find evidence for gendered task differentiation and for the differential use of space by each gender. This has become one of the most popular approaches in the determination of gendered roles within the archaeological record (Claassen 1997:85; Hill 1998:103).

The original foundation for the task differentiation model lies in Schiffer's (1979) behavioural system (Spector 1983:78-80; 1998a:146). In reference to analyzing activity patterning and change, Schiffer (1979:353-354) explains that activities are patterned behaviours that contain "one or more *elements* (animate and inanimate objects), at least one of which is an *energy source*" (emphasis in original). Schiffer (1979:365-366) further asserted that,

> In a behavioral system the participants become skilled in the performance of the many activities that they carry out on a regular basis. They come to expect that activities will take place in certain ways. Repetitive behaviors give rise to activity-maintaining attitudes and values that also are costly to modify, *because they were costly to instill in the first place*" (emphasis in original).

For Schiffer (1979) and LaMotta and Schiffer (2001:18, 21-33), activities are part of patterned behaviour. These behaviour patterns are learned through enculturation and are costly to alter because once instilled within a group, individuals in the group know what tasks are expected of them, what materials are to be used in the completion of the task, and where it is acceptable to complete the task (Schiffer 1979:355, 365-366). Therefore, while culture is never static, it can be relatively stable, stable enough to enable a detailed study of activities, actors, associated artifacts, and location of activities.

Those who work in regions where the reanalysis of the ethnographic data has not been completed or where sufficient evidence for gendered task differentiation has not been found must turn to the task differentiation framework as defined by Conkey and Spector (1984) and as practiced by Spector (1983; 1985; 1991; 1993; 1998a; 1998b). Only after the groundwork for each culture group and region has been laid can researchers develop their interpretations further and delve into archaeological portrayals that include more than two genders, age groups, or status differentiation.

3.3 Engendered Intrasite Spatial Analysis

3.3.1 An Overview of the History of Intrasite Spatial Analysis in Archaeology

A detailed description of spatial analysis as applied to both intersite and intrasite analysis can be found in the seminal work of Hodder and Orton (1976). These authors describe the interpretive importance of spatial analysis as an analytical methodology. They also present precise statistical formulae to be used when determining whether or not the spatial patterns observed by the archaeologist are random or non-random, with non-random patterning being an indication of human agency. These and similar statistical methodologies were first used in biology and geography, and have since been found to also be applicable to archaeological spatial research (Hodder and Orton 1976:30).

Much of the development of spatial analysis in archaeology has come from studies involving the Paleolithic period in Europe. Although certain techniques specific to spatial analysis were used prior to the 1950s, the theoretical basis of archaeological spatial analyses began when the practice of creating site maps, viewing the spatial distribution within a site, and either confirming or refuting whether or not a site was actually an occupation came into practice. During the late 1960s and early 1970s, spatial analysis was further defined and site maps were broken down into multiple overlays, each of which showed specific features and categories of refuse. During this period, the act of defining specific activity areas became part of spatial practice. Additionally, archaeologists began using ethnoarchaeology as a tool to help interpret site formation. By the 1980s, archaeologists were utilizing all three methods: distribution maps, feature or activity area maps, and ethnoarchaeology concurrently instead of employing only one method at a time (Kroll and Price 1991a:1-3).

Essentially, these three phases in the evolution of spatial patterning as an analytical practice within archaeology can be seen as "an initial period of recognition and description, followed by a development of methods, and finally the interpretation of the patterns that emerge" (Kroll and Price 1991b:301). The first period, recognition and description, came within the culture historical period of archaeological thought. The second period, where a methodology was developed, coincides with processual archaeology and the building of scientific methodologies within the discipline. The third period of spatial analysis development, as listed by Kroll and Price (1991a, 1991b), began with postprocessual archaeology and expanded beyond the scientific method into further interpretation.

The combination of these techniques has enabled a higher level of intrasite analytical interpretation. Archaeological spatial analysis has become a tool that is commonly used to determine what specific activities took place within sites; it is also used to define where these activities were undertaken. In order to understand how the mechanics of intrasite spatial analysis work one must first examine the methodology.

3.3.2 Defining Activity Areas within an Archaeological Site

In archaeological terminology, activity area is used to define the space within which a specific human event or action took place (Kent 1984:1). To define activity areas is to isolate organizational units within a site, including features, isolated artifacts associated with features, and clusters of associated artifacts (Bonnichsen 1973:277; Sivertsen 1980:427, 435). The types of artifacts which are recovered from the activity area and their inferred functionality are then used to determine the actual activities that took place at the loci (Sivertsen 1980:435).

There are several factors acting on the archaeological record that can complicate the process of recognizing and defining activity areas. Not all items will be discarded when and where they were used. Not all artifacts are used for only one purpose, most artifacts will be used more than once, and after discard artifacts can be moved in the course of cleaning or through various taphonomic processes (Binford 1978a:342, 347; Simms and Heath 1990:805).

The ability to 'see' discrete activity areas will be complicated by the nature of how the use of space was constructed by the archaeological culture under examination. As noted by Kent (1984:132-133) and Yellen (1977:96-97), many archaeologists assume that all cultures used space in similar ways; that many activities only took place at one locus and that only one activity would be undertaken at a specific locus. However, through the ethnoarchaeological examination of contemporary Navajos, Euroamericans, and Spanish-Americans, Kent (1984) found that while the Euroamerican and Spanish-American families, observed as part of the study, had mono-functional spaces within their households, the Navajo families had many multipurpose activity areas (Kent 1984:132-134). In his discussion of intracamp spatial patterning, as seen through the ethnoarchaeological examination of the !Kung, Yellen (1977:85-97) found that while many activities took place at specific loci, those spaces could be the loci for multiple activities. Therefore, while activity areas may be recognizable, it can not be assumed that only one activity took place at that activity area.

The ability to see activity areas may be optimal at small sites that were occupied over a short period of time. The longer a site is used, the more ambiguity there will be in defining discrete activity areas (Simms and Heath 1990:804; Sivertsen 1980:423). This problem arises because with long periods of occupation, or when a site is abandoned and reoccupied, the need to reuse activity areas, clean activity areas and use activity areas for multiple purposes increases (Binford 1978a:352; Sivertsen 1980:423, 427). However, short term occupation sites will have an added problem in that short period usage may not leave as much archaeological residue as a longer occupation would.

In order to avoid making analytical errors the researcher must be aware of all of the possible factors that may have acted on the artifacts and features at their site. In the case of reoccupation the excavators should attempt to define discrete occupation levels so that the analysis can be conducted based on occupation level as opposed to activity loci. Where secondary refuse disposal has occurred, excavation of the midden should be conducted. If this is not possible, then various microrefuse methodologies can be employed (Hull 1983, 1987; Simms and Heath 1990:804, 807). These methodologies can include micro- and macro- botanical and lithic studies as well as microrefuse and flotation analyses. If discrete occupation layers cannot be determined, Simms and Heath (1990:809) suggest that hearth remains can be used as a determinant of the last activities that took place at a site. They suggest that even though a hearth may be regularly cleaned out, it presumably would not be cleaned just prior to abandonment and therefore will represent the last activities conducted at the site (Simms and Heath 1990:809).

Taphonomic processes will also affect the spatial distribution of artifacts at the site. These processes include scavenger damage and removal or redeposition, trampling by humans or animals, water transport or percolation, and wind erosion. In order to interpret the site and its activity areas adequately the researcher must be aware of all possible processes that can act on the archaeological record within the site. They must also be able to determine when specific processes have acted to change the patterning of the archaeological record and attempt to compensate for such factors.

Even with all of these anticipated difficulties in spatial interpretation, spatial analysis is seen as a viable tool for determining activity loci. Binford (1978a:353) found that patterns in the spatial separation of activity areas can be seen and stated that, "[q]uite clearly there is a basis in 'reality' for seeking patterns in the archaeological remains which derive from spatial segregation of activities". So, while the space, both temporally and horizontally, between artifacts may be difficult to define, artifacts will tend to cluster around activity loci. The analysis of those artifacts will allow for interpretations relevant to the activities undertaken by the individuals who used the site (Binford 1978a:353, 360; Sivertsen 1980:435).

3.3.3 Household Spatial Analysis

In the past two decades there has been a shift in archaeological studies towards domestic architecture. Recently such studies have begun to transfer the focus from functional and economic interpretations toward attempts to elicit "the social and symbolic aspects of spatial organization" (Oetelaar 2000:35). This, to some, marks a shift towards a more humanistic approach to archaeological interpretations (Oetelaar 2000:35).

Essentially, research that focuses on the household interprets the house structure as a whole. This can include the utilized spaces immediately outside of the structure where members of the household engaged in activities. The household is the place where individual inhabitants went about their daily activities. The organization of their activities is based on, and influenced by, group traditions and ideas regarding how tasks are performed and how space is divided amongst the members of the household (Oetelaar 2000:36; Tobey 2002:83). Therefore, since there is a "systematic organization and use of space" a site occupied by members of the same family and/or group will show patterns of activity arrangement (Oetelaar 2000:36).

This said households can be viewed as a whole in order to delineate the boundaries of the space. However, the space within the household can also be broken into activity areas. As noted above these activity areas may overlap in both time and space but careful examination and understanding of those who used the site can help to elicit information regarding which space was used for which activities and by which members of the household.

3.3.4 Engendering Household Spatial Analysis

Using the household as the locus of engendered activity analysis will, in most cases, guarantee the visibility of both genders based on the fact that both women and men often live together and share space within the household (Olsen-Bruhns and Stothert 1999:107, 138; Tringham 1991:101). Importantly, the space around the actual house structure should also be considered, as many household activities will take place within the house structure but other related activities may also take place just outside the structure (Olsen-Bruhns and Stothert 1999:107).

The various tasks and duties that make up daily life in a household setting often repeatedly take place in specific work areas. However, the degree of overlap in the locations where tasks are completed by either gender, or are segregated differs among culture groups (Kent 1984:205-206, 1990:128). In social groups that have a highly definable division of labour, men and women are often thought of as different functional groups (Kent 1984:189). In such groups, there is often a rigid conceptual differentiation between the sexes that creates segmented functional groups, which are often divided according to gender (Kent 1984:189). Such groups also tend to compartmentalize not only space but all aspects of their lives; "they unconsciously conceive of their world as made up of parts" (Kent 1984:206). Kent suggests that by defining sex-specific roles and activities in the ethnographic record archaeologists can determine which tasks and roles will have had the most emphasis placed on differentiation of labour. Those are the tasks and activity areas to look for in the archaeological record (Kent 1984:223-224).

The ethnoarchaeological work of Susan Kent (1984) shows that space can be used differently by various groups. In particular, Kent has shown that different culture groups can have strongly differing ideas about how gender should be viewed and how gendered tasks should be segregated (Kent 1984:185). She found that the culture groups specific to her study tended to view gender similarly within the group but that each group had different ideas about which tasks should be gender-specific and which tasks could be carried out by either gender (Kent 1984:185). Kent also found that the groups in her study varied in the amount of gender segregation present within the culture (Kent 1984:185).

This indicates that different culture groups may use space differently and should have varying degrees of gender specific tasks within the group. Therefore, one may be able to study households within a region and, once the nature of the spatial patterning is understood, be able to define different culture groups through their different practices.

When the archaeologist uses either ethnography or ethnoarchaeology, they can link certain activities in a culture back into the archaeological record. However, where possible, combining both approaches is the most productive methodology (Hughes 1991:25). When tasks that can be linked to primarily one gender are observed, the artifacts, features, and activity areas left behind will leave a record of the gender specific tasks that took place at that locus (Kent 1990:128).

Returning now to task differentiation, Spector (1983, 1985, 1991, 1993, 1998a, 1998b) reanalyzed existing ethnographies in order to extract gender from the archaeological record. This methodology can be used to build a template for gendered activities, which can then be used to examine gender within household spaces. Spector's reanalysis of key late nineteenth century ethnographies pertained to the Hidatsa. She reexamined these ethnographies with a gendered lens, hoping to elicit enough information to create a database of gendered activities for the Hidatsa, which could then be used to interpret the archaeological record (Spector 1983, 1985, 1991, 1993, 1998a, 1998b).

Essentially, Spector's methodology is an ethnoarchaeological study of the anthropological ethnography, with the express goal of determining how and where artifacts will be patterned in the archaeological record and which of those patterns can be attributed to one or the other gender. The limitation of this methodology is that not all tasks will be adequately described in the ethnographic record. However, at least for the Hidatsa, Spector found that there was a contrast in the activities of men and women and the spaces in which these activities took place, indicating that for the Hidatsa there appears to be enough information to identify distinct and gendered tasks within the archaeological record (Spector 1998a:146-149).

Spector's work, defining gendered task differentiation among this one group, indicates that a similar methodology may allow archaeologists to elicit gendered task differentiation for other groups. Such research should begin with relevant ethnographies and focus on using her model to reanalyze them. Then the results can be applied to the archaeological record, assuming that enough gendered detail can be extracted from the ethnographies.

There are, of course, a number of factors that will be problematic when attempting to engender activities and activity areas. First, it must always be remembered that often task differentiation can also be drawn along age specific lines as well as gender specific lines, and that individuals in certain age groups may have been considered gender neutral or existing within a separate gender category (Olsen-Bruhns 1991:427). Each archaeological site must be compared with an ethnographic sample that is as close as possible to the archaeological culture under investigation, in order to control for conceptual differences between culture groups (Olsen-Bruhns 1991:427; Sweely 1999:161).

Another problem with engendered household space, or any engendered archaeology, is that once gendered space and activities have been located the tendency will be for archaeologists to view the resulting gendered categories as fixed and unchanging. It must be remembered that as with any conceptual aspect of culture the concept of gender differentiation is culturally constructed. It must be maintained through cultural controls that are learned constructs, which may remain fixed for long periods but which can also become fluid and change through time (Stig-Sorensen 2000:147-149). Stig-Sorensen argues that because spatial analyses in archaeology have been influenced by structuralism, there is a tendency to view gender within spatial analyses in terms of binary oppositions (Stig-Sorensen 2000:147). She says that while this is a way to neatly package the archaeological record into segmented compartments what ultimately happens is that we begin to view such structures as timeless and unchanging, ignoring human agency and change over time (Stig-Sorensen 2000:147).

The caution here is to remember that social groups are dynamic and that various aspects of a culture may remain essentially the same over long periods of time but they may also undergo permanent changes or periodic situational changes. One such situational change may have been observed by Guenther (1991) in his engendered research at a Plains Archaic campsite in Wyoming. Guenther found that most of the activity areas within the site focused on botanical procurement and processing activities and he interpreted this as a highly specialized site. He reasoned that many of the activities that had been carried out at the site were centered on women's activities. Therefore, he concluded that men must have, at this specific time of the year, engaged in women's activities (Guenther 1991:20). Such an analysis is perfectly reasonable. However, it would also be perfectly reasonable to assume that men were engaged in activities that were not archaeologically visible at the site or that they were not present at the site. Only further analysis of this site and other similar sites will create a body of knowledge that may allow archaeologists to differentiate such cultural details.

3.4 Engendered Spatial Analysis in Northern Plains Archaeology

The engendering of northern Plains archaeology began relatively recently. Few published works deal specifically with the problem of exploring gender within northern Plains archaeology. Even fewer deal specifically with engendered spatial analyses in this type of research. There are, however, a few notable exceptions. First, the proceedings of the 1987 symposium on gender issues in Plains anthropology, published as memoir number 36 of the journal *Plains Anthropologist* (Kornfeld 1991:1). In this issue, studies by Guenther (1991) and Hughes (1991) deal directly with engendered spatial analysis in northern Plains campsites. Another emerging body of research is that of Oetelaar (2000; 2003) and Arnold (2004), who are examining cultural spatial structure and gender within northern Plains tipi rings. When combined with the theoretical bases of gender archaeologies, spatial analysis, ethnography and ethnoarchaeology outlined above, these four studies can be used to begin to build a model for the theoretical basis of how to engender household, specifically tipi ring, research on the northern Plains.

Kornfeld (1991:2) points out that the view of the past within the Plains is that women are archaeologically invisible because they were engaged in activities such as gathering and food preparation. The common view has been that women's activities are not as readily available in the archaeological record as men's activities. Kornfeld (1991) asserts that this assumption is 'absurd' and that the absurdity of such assumptions is evidenced in the papers presented in the Plains Anthropologist memoir noted above.

Two of the papers published in the above memoir have direct implications to the current study. They each deal with northern Plains campsites and the issue of how to define gender within the activity areas at each site. In the first, Guenther examined the ethnographic data of northern Plains groups in order to define gendered roles that were in existence during the early historic period. He then used these data to link the activity areas within the Horse Creek site to possible gendered roles that may have existed in the past (Guenther 1991).

Guenther asserts that, "the boundaries of gender organized tasks are not clearly understood. This is a problem that plagues interpretation of gender dynamics in the archaeological record" (Guenther 1991:9). He also points out that even if gendered roles existed in the past they may have been fluid, meaning that at times women may have completed tasks thought to be the tasks of men and vice versa (Guenther 1991:9, 20). Regardless of his reservations about whether or not gender distinct tasks can be seen in the archaeological record or are obscured by the fact that gender was more fluid than static, Guenther continued with the study. He found that, at the Horse Creek site, the focus of activities was on the gathering and processing of plants, with little or no evidence for large scale hunting and butchering (Guenther 1991:13, 20). The conclusion of this study was that, "[e]xtrapolating from Plains Indian ethnographic data, the site analysis suggests that the choice of site location and the main activities at the Horse Creek site may have been the results of female decisions in their efforts revolving around plant food acquisition and processing of stores for winter consumption" (Guenther 1991:20). Guenther goes on to conclude that in cases such as this men may and could have engaged in what are presumably women's tasks in order to contribute to the survival of the group (Guenther 1991:20).

It seems that what Guenther has proven is that women were more archaeologically present than men at this site. What remains to be seen is whether this holds true for all northern Plains campsites through time and space.

It is, of course, entirely possible that, while men's activities were not recovered archaeologically, men engaged in women's activities at this site, or for example that plant gathering and processing was completed communally by the entire group. Whatever the case, this site will be used in the future, by other researchers, as a model of how to define gendered roles in activity areas at similar sites.

Hughes looks at prehistoric northern Plains divisions of labour in order to engender activity areas within a campsite. She includes her own cautionary tales as to the difficulty of defining gender within the archaeological record by stating that, "[a]nthropologists observe gender associated tasks in living societies directly, but archaeologists must *infer* male and female tasks from archaeological remains" (Hughes 1991:25). In her research Hughes also relies on the ethnographic record of the region to determine gendered task differentiation. However, she includes an analysis of Binford's (1978b) research with the Alaska Nunamiut as an ethnoarchaeological example of 'typical' hunter-gatherer campsite behaviour. She concludes that, based on the ethnographic, ethnoarchaeological, and archaeological research at the Mini-Moon site, "the work spaces represent male and female activity areas" (Hughes 1991:46).

Hughes and Guenther both assert that most of the prehistoric period on the northern Plains is that of a 'specialized bison hunting economy'. They contend that the various zones of the region include much the same environment, there appears to have been gendered task differentiation in existence at the time of contact, and the relative marginality of the region required that subsistence strategies existed as relatively unchanging over time.

This would indicate that the dividing lines between male and female tasks were similar throughout time and space for the region. Therefore, we may begin to assume that gendered roles at contact can be used to define activity areas in the precontact period (Hughes 1991:30, 46, 48; Guenther 1991:17).

Both of these studies have interesting implications for future engendered spatial analyses at northern Plains archaeological campsites. Guenther (1991) found that women, or at least tasks that are ethnographically considered to fall within women's roles, were more visible than men. Hughes (1991) found that women's and men's activities could be identified in at least some activity areas.

These findings and the implications for future research are summed up by Francis (1991), in the *Plains Anthropologist* memoir's final commentary. She states, "in terms of future research, the far more interesting questions center not on whether we can simply extrapolate gender roles into the past through archaeological studies, but on what the nature of variations in gender roles is, and under what circumstances are these fluid or tightly defined" (Francis 1991:79). Francis goes on the assert that, "[w]e must ask the question of how variation in gender roles relates to subsistence and settlement systems, economic and political organization, kinship and religious organizations, and what the dynamics of change are" (Francis 1991:79-80).

Oetelaar's (2000; 2003) research deals with a northern Plains tipi ring site and the consequent engendering of space within the archaeological representations of the prehistoric homes of mobile hunter-gatherer groups of the region. Oetelaar (2000:36-38) discusses how the space within the tipi was traditionally used and divided, among ethnographic groups who used the tipi as their primary home. He then further defines the space based on the activities that the men and women who may have inhabited the space could have carried out within the space and the items that each gender may have stored within the space. He uses these data to postulate that the space within prehistoric tipi rings on the northern Plains can be divided into areas, which can indicate use by one or the other gender (Oetelaar 2000:38-41; 2003:116).

Oetelaar, however, cautions that, “all locales within the tipi could, and probably did, serve a multitude of functions simultaneously” and that there were activities that could have been carried out by both genders (Oetelaar 2000:42). Oetelaar also points out that in defining the usage of space within the tipi, the space would be periodically maintained and cleaned and that during site abandonment any functional and transportable objects would be removed and relocated (Oetelaar 2000:43). Additionally, after abandonment various taphonomic processes, such as carnivore disturbance, rodent disturbance, trampling, natural environmental processes, and scavenging by humans of still functional materials could take place (Oetelaar 2000:43).

Oetelaar’s model has been established in order to examine status and gender simultaneously. Based on a pan-Plains ethnographic analysis, Oetelaar (2000:40) determined that the rear of the tipi was reserved for higher status individuals. From the same ethnographic data, Oetelaar (2000:40) determined that on entering the tipi, the spaces to the left will be predominantly occupied by women and the spaces to the right will be predominantly occupied by men. In his model of the interior space of a tipi Oetelaar (2000:41-42) also discusses the multiple uses of space based on time of day and the fact that numerous activities will be undertaken within the structure. In addition, Oetelaar (2000:40-44) provides a discussion of some of the storage spaces within the tipi and the need for periodic cleaning of the spaces. Oetelaar (2000:36-38) uses what he refers to as fixed points in the structure to orient the spatial analysis. These points are the doorway, hearth, and altar.

Oetelaar (2000) tested his model through the analysis of a precontact tipi ring from southern Alberta. Oetelaar (2000:52) found that the artifacts and features present within the tipi ring correlated to his expected social structure and gender distribution. As for the theoretical contribution of this research towards northern Plains spatial analysis at campsites Oetelaar argues that, "[b]y moving beyond activity areas to the social and symbolic organization of space, the approach . . . forces archaeologists to describe and discuss spatial patterning as the result of conscious decisions made by human beings raised in a particular cultural tradition" (Oetelaar 2000:54).

Setting out to test Oetelaar's (2000) model, Arnold (2004) found that gendered patterning could be elicited from the archaeological record within four tipi rings in southern Alberta. While Arnold (2004) feels that gendered spatial patterning can be elicited from archaeological tipi rings using Oetelaar's model, she concludes that more work is required to refine the model. She felt that using a 'pan-Plains' ethnographic approach fails to highlight any cultural and/or regional differences that may be seen within specific tipi rings. Her suggestions include more specific use of ethnographic data in an attempt to apply the proper ethnographic works to archaeological samples (Arnold 2004:19). However, she recognizes that this is difficult due to the fact that most archaeological samples cannot be unequivocally linked to a specific ethnographic group. She also cautions against any literal acceptance of the ethnographic record due to the biases introduced into these works by the ethnographers (Arnold 2004:21).

3.5 Summary

The research presented in this chapter has been complied in order to establish a theoretical model that can be used to complete an engendered spatial analysis of tipi ring campsites on the northern Plains. In order to elicit gender from the archaeological record, the term gender must first be defined; this study found that culturally constructed gender can include more than two genders and that an individual's gender role can change as they pass through different age categories. However, in order to move towards 'finding' gender within the archaeological record, one must first work with the assumption that there were only two possible genders, man and woman. Once these two genders can be examined with relative confidence then other genders and various age grades may also be 'found'.

Feminist theory in archaeology was introduced in order to provide the framework that engendered archaeology should follow. These theories include academic discussions regarding the accessibility of gender within the archaeological record and regarding the position of engendered archaeology within Postprocessual archaeologies. Gender theory and engendered archaeologies provide the methodology through which gender can be located within the archaeological record.

The exploration of feminist archaeological theory and engendered archaeologies suggests that the best model to follow is Spector's (1983, 1985, 1991, 1993, 1998a, 1998b) task differentiation model. This model proposes that the ethnographic record, for a given area, should be reexamined through an informed lens. When viewed with the knowledge that the ethnographic record is most often both ethnocentric and androcentric, a reexamination is necessary in order to extrapolate true gendered task differentiation models for the culture group in question. The task differentiation model can then be used to analyze activity areas within a site and assign gender to the various tasks and/or spaces that can be identified.

In order to analyze activity areas and gendered spaces, a spatial analysis must be completed. The spatial analysis framework presented here follows the method of analysis through its origins in archaeology to its specific application in defining activity areas, examining household space and engendering that portion of the archaeological record. The ethnographic model used to define task differentiation was also used to inform the researcher about how space was used by the archaeological group in question and how space was segregated between the genders.

The studies of four Plains archaeologists were presented as examples of research into how engendered spatial analyses of precontact campsites have been conducted. Two of the authors, Guenther (1991) and Hughes (1991) used the task differentiation model to view activity areas within a site but not the house structure. The third and fourth authors, Oetelaar (2000; 2003) and Arnold (2004) used the task differentiation model to engender the space within the household. Oetelaar used this as the basis for determining that gendered spaces within Plains tipis may have been structured so that the left side was the women's side and the right side was the men's side. Arnold tested Oetelaar's model and confirmed that gendered space may be visible archaeologically. All four authors found evidence for gender performance within the archaeological sites they examined. The fact that all four were able to 'find' gender indicates that women are visible in the archaeological record on the northern Plains. The methodologies used by these authors are refined and combined with an updated task differentiation model in the following chapters.

CHAPTER FOUR

ETHNOGRAPHIC DATA AND TASK DIFFERENTIATION

4.1 Introduction

This chapter discusses the ethnographic background to the archaeological spatial analysis undertaken in the following chapter. The issue of how ethnography has been used to inform spatial analysis is explored. This is followed by a brief discussion of some of the cultural changes that occurred in Plains cultures with European contact. The task differentiation model, as discussed in Chapter Three, is adapted for specific use in this study. The ethnographic research, including explorer/fur trader journals, historic photographs, and studies completed by modern Blackfoot people that were examined for this analysis are discussed. No matter who the writer and/or researcher was, each work is situated within the particular worldview of its author and his/her culture. The research conducted in order to collect the data used in this section of the thesis was undertaken with this in mind. Every effort was made to continually be aware of the ethnocentric and androcentric nature of the material under investigation. The analyses made from this material have also been written with the knowledge that this author has certain biases; I have made every effort to create an unbiased analysis.

In this chapter, the data collected will be introduced and explored. The nature of the Blackfoot conception of gender, task differentiation, and spatial segregation of space are discussed and analyzed. The data introduced and discussed in this chapter will be used to set up a model to test whether or not a gendered segregation of space can be seen within the ten tipi rings at the five campsites used in this study.

4.2 Ethnography in Household Spatial Analysis

In the discipline of archaeology, material assemblages are often assigned to categories which can result in the artifact taking on cultural characteristics that may or may not have been recognizable within the archaeological culture under examination. Assumptions based on the usage of space and the identity of the individual who used that space are also often misrepresented. Kent (1984:13-14) suggests that, "[i]t is only through the recognition of the differences among culture, behavior, and cultural material, and of their interrelationships, that such confusions can be avoided."

Through the use of ethnography, archaeological cultures can be understood on their own terms. If possible the direct historical approach should be used as a link from an extant group living much the same way their archaeological ancestors did, as different groups use and organize space in different ways (Kent 1984:185). However, this is rarely, if ever, possible. Therefore, archaeologists are often left to determine a 'best fit' model and choose those ethnographic groups that are closest to the archaeological group being studied.

The strength of ethnography is that it can be used to either confirm or refute assumptions made regarding the usage of artifacts and space within a site (Bonnichsen 1973:287). Additionally, the ethnographic record has the potential to inform archaeological investigators as to possible gender manifestations available to the inhabitants of any given site (Hill 1998:116). However, one can not test the accuracy of the ethnographic data, especially when the culture under investigation is extinct or has been greatly altered.

The strength of the ethnographic record is that it can be used to "formulate expectations in terms of variability in architectural remains that relate to and reflect changes in the role, relations and actions of men and women in the household in prehistory" (Tringham 1991:103). Therefore, it can be a powerful tool that archaeologists should employ in order to understand the processes and human interactions that created the archaeological record. In addition, culture specific ethnographic analyses have the potential to help the researcher identify specific cultural conceptions, including gender roles, which may have ordered activity and task completion. In order to compile the most complete culture specific bibliography possible, one should not examine only scientific ethnographies but any available cultural information should be used. For example, this analysis has drawn on the ethnographic record, the journals of early explorers and fur traders who traveled into the region, historic photographs, and more recent publications by members of modern Blackfoot culture.

4.3 The Task Differentiation Model As Adapted For This Study

Among anthropologists it is generally accepted that there is a division of labour between the sexes in most cultures (Brown 1970; Dahlberg 1981; Murdock 1937; Murdock and Provost 1973). According to Friedl (1984[1975]:18-19) there are "four major patterns of sexual division of labor among foragers." The first are culture groups in which males mainly provide for their own subsistence and females provide for themselves and their dependant children. The second pattern includes culture groups in which all actors are involved in subsistence procurement, whether that be hunting, fishing or gathering. In such groups there is a communal effort in large hunts involving drives, traps, jumps, and pounds. Here all members of the group are involved in the acquiring of foodstuffs and these goods are shared among the group. In the third pattern identified by Friedl (1984[1975]), males and females almost always procure foodstuffs separately and then share. In such groups, females provide the bulk of subsistence needs through gathering while male hunting may contribute up to 40 percent of the subsistence needs. The fourth pattern is one in which the main source of subsistence is meat, which is provided by male hunting (Friedl 1984[1975]).

Plains cultures appear to have moved between Friedl's second and third pattern, depending on the season and availability of food for either gathering or hunting. Therefore, task differentiation based on sex and/or gender may have been dependent on circumstances and in certain cases what was considered women's work in any given Plains culture could have been completed by men and those tasks that were considered men's work could have been completed by women (Albers 1989:136; M. Schneider 1983:104). However, not all Plains cultures were uniform in their gender practices and an activity that was completed by women in one culture may have been completed by men in another; conversely men's tasks in one culture may have been completed by women in another (Dahlberg 1981:13-14; Olsen-Bruhns 1991:427-428; M. Schneider 1983:104, 118).

Among Plains groups there were certain activities or occupations that were culturally attributed to one gender but that could be undertaken by a member of the other gender without stigmatization (Albers 1989:136). As stated by Albers (1989:136),

> Although there were cultural differences in the manner and degree in which various occupational domains were crossed by women and men, these were rarely closed. The kinds of institutionalized boundaries that would have prohibited people from taking on the productive role of the opposite sex did not exist in most American Indian societies.

Since gender roles were often fluid and not static and since gendered tasks have the potential to be attributed to one gender in one culture but could be attributed to a different gender in another culture, any consideration of task differentiation by gender must be completed on a culture by culture basis.

A further complicating factor for any gendered task differentiation model is that both women and men could engage in activities at the same loci and they could manufacture and/or use the same or similar tools for various tasks (Olsen-Bruhns 1991:427). In addition, while various tasks may have been segregated along age specific lines such tasks cannot be categorized as gender specific and must remain separate from tasks that are considered gender specific (Olsen-Bruhns 1991:427).

Keeping all of the above noted difficulties and considerations in mind, a task differentiation table has been designed that is specific to this study. The table used here has its foundation in Spector's (1983; 1985; 1991; 1993; 1998a, 1998b) original model (as discussed in Chapter Three). However, the model has been modified for specific use with the nomadic Blackfoot who historically inhabited large parts of what is now known as Alberta, Saskatchewan and Montana. The original categories that were set up for this ethnographic analysis were: 1) activity/task, 2) actor (woman/man/etc.), 3) participant ages, 4) social unit involved, 5) location on the landscape, 6) location of activity within the site, 7) materials associated, 8) tools associated, 9) debitage created, 10) treatment of debitage, 11) features associated, 12) structures associated, 13) season in which activity took place, and 14) specific timing of activity. The large number of categories was formulated in an attempt to collect as many relevant data as possible. The categories were to be filled in as data were gathered through the examination of existing ethnographic works, early explorer and fur-trader journals, modern cultural analyses by Blackfoot individuals, and historic pictures that dealt specifically with the historic Blackfoot. Only data and activities that were specifically referenced in these works were tabulated.

Once this research had been completed, it was found that many of the original categories had either very few data entered in them or had been left completely blank. In the cases where no data had been recovered for the entire category that column was simply removed from the table. These categories were: 1) location on the landscape, 2) treatment of debitage, and 3) specific timing of activity. In those categories for which very little overall information had been recorded, those data were moved to the comments section and the column was deleted. These categories were: 1) participant ages, 2) social unit involved, 3) location within the site, 4) debitage created, 5) structures associated (this information was conflated into the features associated category), and 6) season in which activity takes place. This has left the final table with the following categories: 1) activity/task, 2) actor (woman/man/etc.), 3) materials associated, 4) tools associated, and 5) features associated. Also included within the final tables are two additional columns for the reference, and comments. The final tables will be used as the model for gendered task differentiation among the Blackfoot. This is the information that will allow for engendered inferences to be made from the spatial analysis of the tipi rings and related artifacts from the archaeological campsite data used in this study.

4.4 Ethnographic Data

4.4.1 Background to the Ethnographic Study

Numerous lines of evidence were examined in this analysis. Each of these methods of analysis can be beneficial to this particular study. However, each is also problematic in that they carry certain historical biases and culturally distorting factors. Early ethnographic work on the Plains dealt with Plains cultures which had been greatly altered through contact with Europeans. In most cases the groups under investigation were either in the process of being moved onto reserves and reservations or were already living under these culturally restrictive circumstances. The explorer/fur trader journals contain earlier information regarding the culture groups that they encountered. However, their accounts usually include discussions regarding groups and individuals who have come to trading posts, which was in itself a major alteration of the culture and the traditional seasonal round.

The application of the Plains historic and ethnographic record to archaeological study in the region is a complex matter, which becomes even more complex when the researcher is examining gender. Anthropologists study active cultural processes in order to assess gender roles. However, archaeologists must interpret archaeological remains to infer how cultural processes may have been in operation in another time and place (Hughes 1991:25). One common method is ethnographic analogy, or applying the ethnographic record of a similar culture to the archaeological record (Hughes 1991:25).

Plains archaeologists have often applied ethnographic data from hunter-gatherer groups from around the world. While there can be validity in such analogies, it is preferable to employ the ethnographic record of groups that are as close as possible to the archaeological cultures under examination (Duke 1991:9-10). This gives agency to the individual groups whose ancestors may have been active in creating the archaeological record under examination, which is especially true when examining gender roles because gender performance varies greatly between culture groups (Milledge-Nelson 1997:85; M. Schneider 1983:104).

There are obviously certain activities, such as childbirth, that are determined by biological sex (M. Schneider 1983:104). However, gender roles are not consistently divided within various cultures and what is considered women's work in one culture may be men's work in another (M. Schneider 1983:104). Unfortunately, anthropology has tended to over-simplify the issue by compartmentalizing and universalizing women's and men's roles across cultures (Milledge-Nelson 1997:85). Therefore, ethnographic analogy should be used with caution (Milledge-Nelson 1997:85) and the application of gender roles to the archaeological record should be applied from the closest possible ethnographic culture that can be studied. In this study the ethnographic and historic record of the Blackfoot has been carefully examined in great detail. The Blackfoot were selected because there is a rich body of literature dealing specifically with this culture group (Duke 1991:9-10).

This type of ethnographic analogy is the direct historic approach. The methodology is used to apply the cultural processes of a specific ethnographic group to the archaeological record of their ancestors (Hughes 1991:28; Milledge-Nelson 1997:95). Using the direct historic approach is, of course, not without problems. It is difficult to know whether or not one specific historic culture group created any given archaeological site. In the case of this particular study the area in which the sites are located has been historically linked to the Blackfoot.

When it comes to the examination of gender, there are also a number of limitations within the ethnographic and historic records. Early explorers, travelers, and ethnographers were not implicitly interested in women's roles; the observers were males who observed and interviewed predominantly males (Weist 1980:256). This does not, however, mean that the study of women's roles is impossible, only that such a study must involve the piecing together of information from numerous sources with an awareness of the androcentric and ethnocentric standpoints from which the data were compiled (Weist 1980:256-257).

The object of this analysis is to examine the roles of women and their archaeological visibility. However, due to the nature of the ethnographic and historic evidence from which the expression of those roles has been elicited, it is necessary to comment on the status of Plains women. Within anthropology and archaeology there is a long standing belief that Plains native women were drudges and slaves to their men (Albers 1983:3; M. Schneider 1983:118; Weist 1980:256). This belief is largely an artifact of the ideologies of those men who were the first white travelers to record Plains cultures and the men who were the first ethnographers of those cultures.

The early white travelers into the region and then later the early ethnographers carried European and Euro-American values with them, and these value systems held that women were to be passive and inferior (Albers 1983:3; A. Kehoe 1983:70). In addition, women were often given low status because of the low value that these recorders placed on the tasks that women were completing (Bataille and Mullen-Sands 1984:vii). Consequently, "Plains Indian women are rarely visible as individuals or a category of people in the early journals of traders, missionaries, explorers, and government agents" (Albers 1983:3). The journals of the early travelers are few in number and often difficult to access (Albers 1983:3). In addition, within the heavily biased nature of the accounts "it is not always easy to separate the valid interpretations from the false ones, conclusive and unequivocal statements about the experiences of native American women are hard to make" (Albers 1983:3).

While it is unfortunate that women's activities, roles, and status were not observed on their own merit, this does not mean that there is a complete lack of evidence for women's status and roles within the early historic and ethnographic records. These works do contain some information and careful reinterpretation will eventually allow for a clearer picture of Plains native women (Albers 1983:3). Women were active participants in society and played a critical role in the welfare of the group, within all areas of cultural performance including subsistence, craftwork, and religious activities (Weist 1980:256, 267). Women not only played an active role in society but were also "economically necessary to societal well-being" (Weist 1980:262). They also sought and were able to garner recognition, status and prestige, for themselves and their families, through their work and abilities (A. Kehoe 1983:57; M. Schneider 1983:118; Weist 1983:38).

Among many North American native groups, "women and men tended toward complementarity" in their ideological, symbolic, and everyday lives (Albers 1989:137). Rather than view gender and gendered task differentiation in order to determine the varying degrees of status between individuals and genders within the historic and ethnographic studies that were used in this analysis I have attempted to view gender roles as complementary (see Sharp

1994 for a discussion of the dominance model versus the complementarity model).

4.4.2 Blackfoot Ethnography and Task Differentiation

4.4.2.1 Blackfoot Organization and Geographic Location

The term Blackfoot describes three separate tribes: the Blackfoot or northern Blackfoot, the Peigan, and the Blood (Bastien 2004:9; Blackfoot Gallery Committee 2001:2-3; Ewers 1944:7, 1945:9; Glover 1962:252; Grinnell 2003 [1892]:177; A. Kehoe 1995:114; Thwaites 1906:95; Tyrrell 1916:345). Some ethnographers and researchers recognize four tribal distinctions: the Blackfoot or northern Blackfoot, the north Peigan, the south Peigan, and the Blood (Bastien 2004:9; Blackfoot Gallery Committee 2001:2-3; Duvall 1904-1911:578). The tribal names listed above are the generally accepted English names of each tribal group. However, these groups are also listed throughout the literature according to their traditional Blackfoot language names. While these translations have various spellings and forms the most prominent are: *Siksika* for Blackfoot, *Pikani* for Peigan (*Apatohsipikani* for northern Peigan and A*msskaapipikani* for southern Peigan), and *Kainai* for Blood (Bastien 2004:9; Blackfoot Gallery Committee 2001:2-3; Ewers 1944:7; A. Kehoe 1995:114; Thwaites 1906:95). While authors such as Bastien (2004:9) recognize two distinct Peigan groups, they also note that this distinction is fairly recent and the two groups were originally one. While all of these tribal distinctions are now readily recognized, Grinnell (1892:153) indicated that they were once all part of one larger group, the Blackfoot and that the Bloods and Peigans and are relatively recent offshoots of the main group. In the Blackfoot language when one refers to all of the tribes as a whole the term *Siksikaitsitapi* is used (Bastien 2004:9). In addition, the Blackfoot may also be referred to as the Blackfeet, a distinction not in traditional culture but in the fact that Blackfoot is the Canadian English term for the entire culture group and Blackfeet is the American English term.

At the time of European contact, these four tribes occupied neighbouring geographic locations and spoke the same language (Blackfoot Gallery Committee 2001:4; Duvall 1904-1911:578; Ewers 1944:7; Glover 1962:252; Grinnell 2003 [1892]:177; A. Kehoe 1995:114; Thwaites 1906:95; Tyrrell 1916:345). The various groups shared the same cultural customs, practiced intermarriage, and were known to engage in warfare together against common enemies (Blackfoot Gallery Committee 2001:4; Ewers 1944:7; Grinnell 2003 [1892]:177).

While the three to four tribal distinctions may be generally recognized, those data concerning specific cultural practices are often conflated in the ethnographic literature. In the journals of the early explorers, and later edited publications of those journals, the tribal names may be used interchangeably or the author may not have made clear distinctions between the various groups. Therefore, as it is commonly recognized that the four separate tribes shared (and still share) similar cultural customs, for purposes of analysis the four tribes have been considered one culture group. This culture group is referred to here as the Blackfoot.

At the time of European contact, the Blackfoot were occupying a vast region of the northern Plains. There are various accountings of the exact geographic location of the Blackfoot before contact, at contact and throughout the contact period prior to the reservation and reserve period. At the greatest extent of geographic location, the northern limits were the North Saskatchewan River to the Yellowstone River in the south; the Rocky Mountains in the west and to the east well into what is now the Canadian province of Saskatchewan and the eastern areas of what is now the state of Montana in the United States (Figure 4.1) (Blackfoot Gallery Committee 2001:4; Ewers 1944:7, 1945:9, 1985:121; Glover 1962:252; Grinnell 2003 [1892]:177; W. Hanna 1988:24; A. Kehoe 1995:113-114; Tyrrell 1916:345).

According to the available data this was the greatest extent of Blackfoot territory at any time in history. The precontact location and origins of Blackfoot culture is largely unknown and has been debated in the literature (see Brink 1986 for this discussion). The Blackfoot appear to be relative newcomers to the Plains. As noted by Brink (1986:9) the origins of the Blackfoot can be traced from every cardinal direction and no one researcher has thus far been able to pinpoint the exact migration route and timing of migration for this culture group. However, at the time of European contact the Blackfoot were the main inhabitants within the study area for this analysis.

From an archaeological standpoint, Old Women's phase pottery (also referred to as Ethridge Ware) has been linked to pre-Blackfoot people (Walde and Meyer 2003; Walde et al. 1995). Old Women's culture has been postulated to have taken "form on the Saskatchewan, Montana and Alberta plains" after about 800 A. D. (Walde et al. 1995:7). If Old Women's phase is in fact linked to the ancestors of the Blackfoot, then this culture group can be inferred to have inhabited portions of their contact period territory for at least 900 years before European influences began to produce cultural and territorial shifts in the region.

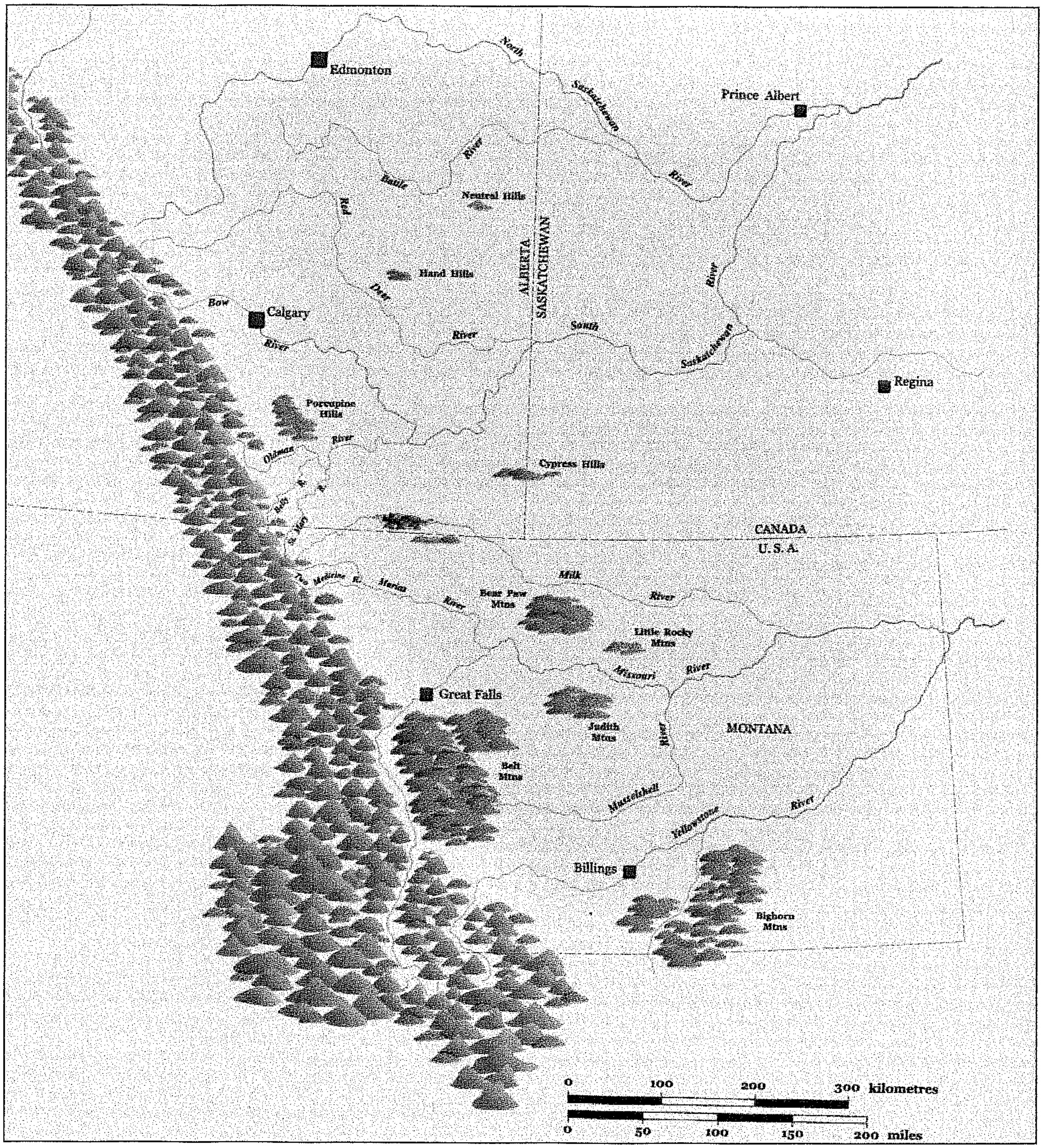

Figure 4.1. Approximate boundaries (darker shading) of pre-reservation and pre-reserve Blackfoot Territory (Blackfoot Gallery Committee 2001:5).

4.4.2.2 Organization of the Blackfoot Cultural Research

At the time of European incursion into the study region, southern Alberta may have been inhabited and/or utilized by a number of culture groups, including the Assiniboine, Blackfoot, Cree, Crow, Gros Ventre, Kutenai, Sarsi, and Shoshoni (Brink 1986; Duke 1991:55). The exact geographic location of various culture groups and their possible ties to archaeological sites is a topic that is beyond the scope of the present study. The archaeological study area of the Little Bow Reservoir Project - Mosquito Creek Segment is in a region that was known to have been inhabited by the Blackfoot in the Contact period.

The cultural usage of the area was confirmed during excavations at EbPi-51 when the site was visited by Mrs. Rosie Day Rider of the Kainai First Nation (Landals and Tischer 2001:25). Mrs. Day Rider related information concerning her ancestor Many Spotted Horses, stating that Many Spotted Horses was known to have camped in the area (Landals, personal communication 2005). Mrs. Day Rider connected the stories she recounted with Stone Circle 4 at EbPi-51. This feature was originally perceived to have possibly had two interior hearths and Many Spotted Horses was known to have owned a tipi with two hearths. While there is no evidence to unequivocally connect Many Spotted Horses with this feature there is a connection with the nature of the feature and the fact that he was known to have camped in the area (Landals, personal communication 2005).

Therefore, while it is recognized that the archaeological assemblages studied here may or may not have been created by Blackfoot or pre-Blackfoot culture groups, the ethnographic analysis that has been conducted for this study has focused exclusively on the record of the Blackfoot. One specific culture group was selected in order to complete a detailed gendered task differentiation and interior domestic space usage model which is culture specific. The Blackfoot were selected because they are known to have utilized the area and there is a great deal of data regarding the Blackfoot.

The current description of Blackfoot culture has been derived from numerous ethnographic studies that focused specifically on the Blackfoot. In addition, the observations and comments made by various early explorers who made contact with Blackfoot groups have been included in the analysis. The selection of which explorers' works to use in the analysis was based on certain assertions made by Brink (1986). He reported that while examining the journals of various explorers he noted that some individuals may have been confusing certain culture groups with other culture groups. This unfortunate circumstance appears to be the result of the translation of the various languages used by Europeans and Native North Americans. Since this research is an attempt to compile detailed ethnographic data for one of the many Plains groups, the Blackfoot, in those cases where there appears to have been some question as to which culture groups were encountered by the author of the journal those works were left out of the analysis. To supplement the written data, photographs of the Blackfoot available at the Glenbow Archives in Calgary, Alberta were examined to see if any of the patterns that had been found in the written research could be confirmed by the photographs. This part of the research was largely unhelpful as most of the historic photographs are quite obviously staged and everyday activities, especially women's activities, are generally not depicted, either because they were uninteresting to the photographer or because the people being photographed were unwilling to be seen labouring at their day to day activities. As noted by McClintock (1968 [1910]:231), "I found greater difficulty in photographing women than men. I was at a loss to understand the cause of my trouble, until I discovered that they were unwilling to have their pictures taken dressed in their ordinary clothes, as I usually found them while pursuing their daily avocations." The research used in this analysis has relied heavily on the ethnographic research of a number of ethnographers and observers, as well as the assertions of contemporary Blackfoot who publish on various aspects of their culture.

4.4.2.3 Blackfoot Cultural Changes Occurring With European Contact

The Blackfoot were affected by contact before they even encountered Europeans. Although the exact year will never be known, the Blackfoot culture was first altered by Europeans through the acquisition of the horse in the early 1700s (Conaty 1995:403; Ewers 1944:17, 1945:9; Lewis 1942:60). The next aspect of change brought about by Europeans came about in the mid-1700s through the acquisition of trade goods, acquired indirectly through other Native groups (Ewers 1944:17). In the late 1700s the Blackfoot finally directly encountered Europeans themselves as early explorers and fur traders began to move further west (Ewers 1945:33).

It has been argued that basic Blackfoot cultural processes and their underlying cultural structures remained essentially the same (Conaty 1995:405; Ewers 1945:9). However, in any examination of gender relations and structures it must be remembered that contact with Europeans also created certain elemental changes within the culture. As stated by Duke (1992:101-102), "The Blackfoot are formally characterized as egalitarian, but the effects of the fur trade and the acquisition of the horse created social rankings, a shift to individualism from communalism, and changes in the status of females throughout the historic period." Therefore, the following analysis was conducted with an awareness that while the underlying basic cultural processes may have remained intact, certain aspects of the culture may have been more affected by contact than others.

4.4.2.4 Blackfoot Cultural Conception of Gender and Gender Relations

In order to examine gendered task differentiation within Blackfoot culture the Blackfoot conception of gender must first be examined. Also, and just as importantly, the ethnographic record and early journals must be read with an understanding of the culture of those who were recording Blackfoot culture. The explorers, fur traders and ethnographers alike were a product not only of their culture, in which women played very different roles, but their cultural observations were also mainly a product of their own gender (Conaty 1995:407-408). For example, male ethnographers used male informants and for the most part focused on male activities (A. Kehoe 2003:392-393). The effect of this bias was to obscure, "the unusual numbers of opportunities given to women to distinguish themselves" (A. Kehoe 2003:69).

In the examination of gender, these biases obscure the realities of gender relations and cultural processes involving gender. In addition, while early recorders and ethnographers of Blackfoot culture were both ethnocentric and androcentric, these men were for the most part relatively ambivalent toward gender operations (Duke 1992:106-107). The object of their journals and analyses was not gender relations but to report whether certain groups and areas would be of use to the fur trade and later to record what were perceived as rapidly disappearing cultures.

In general, women and men in many native North American cultures had complementary roles within society (Albers 1989:137). This theory holds for Blackfoot society where the one could not have survived without the other (Albers 1989:137; Blackfoot Gallery Committee 2001:24-26). Blackfoot women, rather than being disenfranchised as is commonly believed, were an active and productive integral part of society (Albers 1989:137). However, during the contact period, women's status was eroded as men gained more power and control over economic wealth within the European fur trade (Albers 1989:142). As the Contact period progressed, women became important labour for the production of hides and furs, polygamy increased dramatically and women's status and economic power were eroded (Albers 1989:143).

Some researchers have examined the question of women's traditional roles and status in Blackfoot society prior to European contact (see for example Albers 1989; A. Kehoe 1976; 1983; 1995; Weist 1980). From an economic standpoint, women and men had important complementary roles (A. Kehoe 1995:114). Women owned the products they produced including the tipi, the meat they butchered, the clothes they made, and the food they prepared for immediate consumption and for storage (Conaty 1995:407-408; B. HungryWolf 1982:125; A. Kehoe 1976:70, 1983:69, 1995:114-115).

In terms of women's perceived status in traditional Blackfoot society, Europeans reported that women were slaves and drudges. On the other hand they reported that the men were always at rest, eating, smoking, and participating in various ceremonies. However, when viewed from inside the culture and in light of the changes resulting from contact, women can be shown to have had a great deal of status and personal autonomy prior to contact (B. HungryWolf 1982:109-110; A. Kehoe 1976:71).

In order to gain a better understanding of the status of women in traditional Blackfoot society, one can examine the nature of the spiritual power that women held within society. As noted by A. Kehoe (1995:116),

> Women's roles in ritual and myth reflect their economic power. Women are seen as the intermediary or means through which power has been granted to humans. This crucial role appears in medicine bundle openings: only a woman should unwrap a holy bundle. She hands the powerful objects inside to the male celebrant. It is important to note that the woman sits quietly behind the man and to European eyes seems to be a servant. The Blackfoot see the woman as more powerful than the man, who dares not handle the bundle entire and alone. The modesty of the woman's dress and her manner is a sign of her *intrinsic* power: she is so secure in it that she need not flaunt her role.

It was women who held the power in ritual, indicating that women did in fact have high status within society. An individual who was perceived as nothing more than a slave would not also be seen as spiritually and ritually powerful.

Women's 'intrinsic power' is also evidenced in the ways both men and women 'count' their successes. Men 'counted coup'; they recounted their deeds and important accomplishments for all to hear (A. Kehoe 1995:122). Men also engaged in vision questing as a means through which to become noticed and recognized by various spiritual powers in order to acquire more power and knowledge themselves (A. Kehoe 1995:122). Women on the other hand were spiritually powerful by nature and their accomplishments were obvious in their skill at hide tanning, tipi making, processing food, and bearing and raising accomplished children (both female and male) (A. Kehoe 1995:122). Even though women and men counted their successes in different manners, there was a complementarity here as well. In fact, as stated by B. HungryWolf (1982:109-110), "In the social life of my grandmothers, a household was judged not only by the bravery and generosity of the man, but also by the kindness and work habits of the woman."

In terms of the structure of task differentiation women and men, for the most part, engaged in different activities. Men were in charge of the hunt; it was their duty to procure meat (Blackfoot Gallery Committee 2001:24-26; B. HungryWolf 1982:109-110). Men were also expected to provide for the safety of the group, by ensuring that warring enemies and raiders were not allowed access to the camp, its people, and its material goods (Blackfoot Gallery Committee 2001:24-26; B. HungryWolf 1982:109-110). Women were expected to gather plant products, process raw materials into food, clothing, and shelter and bear children (Blackfoot Gallery Committee 2001:24-26; W. Hanna 1988:35; B. HungryWolf 1982:109-110; Grinnell 2003 [1892]:182; Wissler 1911:27-28).

What can be seen from this basic structure of task differentiation is that men's activities would often take them out of the camp in order to perform their subsistence and protective duties. Women, on the other hand, were, with the exception of gathering, often at the camp ensuring the prosperity of the group by processing the items needed for survival.

With economic involvement in the fur trade women's activities intensified. They not only were required to provide for the food, clothing and shelter needs of the camp but they also became the means of production for trade with Europeans. Men's activities on the other hand were made simpler by the introduction of horses and European weaponry. For example, it was easier to chase a herd of bison and kill many animals with horses and guns than it had been to wait and coax animals towards a bison jump or pound. Therefore, as viewed through European eyes, women were constantly working, while men engaged in the exciting hunt and afterward spent their time engaged in social activities.

4.4.2.5 Examination of Blackfoot Task Differentiation

As discussed in section 4.3, the task differentiation model has been adapted for use with historic data, ethnographic data and modern internal cultural data for the Blackfoot. The various tables that are used in this analysis were compiled in order to organize the information so that inferences and conclusions could be drawn regarding gendered task differentiation among the Blackfoot.

In all thirty tables were created. These tables organize the data into thirty main identified campsite activities that were recorded through the research. The activities recognized in these tables are: 1) backrest weaving/beds, 2) berry gathering/processing 3) bone processing, 4) camp butchering, 5) ceremonies, 6) cooking, 7) driving stakes, 8) games, 9) giving birth, 10) grooming and adornment, 11) hideworking, 12) lodgepole making, 13) meat processing, 14) medicines/doctoring, 15) miscellaneous gathering, 16) miscellaneous manufacture 17) painting, 18) pemmican making, 19) pipe making, 20) plant/root gathering and processing, 21) pottery making, 22) quillwork/beadwork, 23) setting up/packing up camp, 24) sewing, 25) sweat lodges, 26) tipi cover making, 27) tool making, 28) travois making, 29) utensil/dish making, and 30) weapon making. The complete tables are listed in Appendix A. Due to space limitations, the reader is referred to specific referencing of the data within each table.

Some of the tables have more data entered on them and some rows have more complete information than others. This is not a reflection of the frequency of activity or of its relative importance to the Blackfoot; rather it is a reflection of the interests of the authors of the research used in this study. For example the category 'games' has the most data and the most complete information, because how leisure time was spent was of great interest to many of the authors, perhaps because they were able to find some similarities between Blackfoot games and games within their own cultures. On the opposite end of the spectrum, giving birth was mentioned only once in the research.

Backrest weaving and how beds were made was not often discussed in the literature. It is possible that such an activity was rarely observed. Of the three references noted here, none specified who was making these items. For specific references see Appendix A, Table A.1.

Berry gathering and processing was an activity that seems to have been exclusively completed by women and girls. Only McClintock (1968 [1910]) referred to berry gathering as an activity that could be undertaken by 'children', which may include boys. Berries that had been gathered would be returned to the camp for processing. If the berries were to be dried they would be laid out on a perforated hide. If the berries were to be crushed a hafted stone maul could be used. For specific references see Appendix A, Table A.2.

Bone processing was undertaken in marrow extraction. The three references noted here indicate that either a hafted maul or a large rock could be used to break open the bones. According to the collected data this was an activity completed by women and girls. For specific references see Appendix A, Table A.3.

The data indicate that camp butchering was an activity that could have been completed by both men and women. The types of tools reported as used include: axes, knives (stone and metal), and humerus clubs. For specific references see Appendix A, Table A.4.

Ceremonies were important activities which were most often engaged in inside the tipi, at an altar to the rear of the central hearth. However, large ceremonies such as the Sundance, in which women were the head ceremonialists, involved a communal gathering and would have created a separate site (A. Kehoe 1976:73; McClintock 1968 [1910]:294-296). The ceremonial data recorded on the table refer to both women and men as having roles in ceremonies. There are numerous materials associated with such activities, and these materials would differ from ceremony to ceremony. Such materials include sweetgrass (*Hierochloe odorata*), sages (*Artemisia* spp.), pipes, tobacco, coals, a forked stick for handling the coals, paints, rattles, feathers, hides, whistles, pebbles, and soups. For specific references see Appendix A, Table A.5.

Cooking was a camp activity that was engaged in exclusively by women. They may have been helped by girls who were being trained for adulthood. The cooking of food was undertaken in two main ways, boiling and roasting. Boiling food could be accomplished by digging a hole in the ground, lining it with a hide, filling it with water and heating the water with fire-heated stones. Boiling could also be done over a hearth in clay pots and later European trade kettles. Roasting could be done by cooking the meat and/or vegetables on the hot coals of a hearth. Pit roasting was also undertaken. A pit would be dug and lined with hot stones, brush, water, hides, soil, and the food to be cooked. For specific references see Appendix A, Table A.6.

The activity of driving stakes was recorded only once. Stakes could be driven into hides during hide working to secure them to the ground. This activity could also be included in setting up the tipi, if it was secured with stakes as opposed to cobbles. Though noted only once it can be inferred that this would have been women's activity, since hideworking and setting up of the tipi were women's activities. For specific references see Appendix A, Table A.7.

Games, including gambling and child's play, are discussed at length in much of the research analyzed for this study. Since varying names for games appear in the literature, games have been grouped in the table according to similar characteristics. Most of the games listed took place within the grounds of a campsite, some may have been played within a tipi, and others for which a great deal of open space was needed may have been played directly adjacent to the campsite. Children's games seem to have been variously designed to provide amusement and also to teach and train children in the skills that would be necessary to be productive and successful adults. Whether or not all of the games noted in this study have great antiquity is questionable; as stated by Wissler's Blackfoot informant Duvall, "The people only got it [the stick game] a year ago from another tribe" (Duvall 1904-1911:807). For specific references see Appendix A, Table A.8.

Giving birth is biologically restricted to a female activity. For specific references see Appendix A, Table A.9.

Grooming and adornment was a category rarely discussed in the literature. In the two references either men or women were involved. For specific references see Appendix A, Table A.10.

Hideworking includes the entire process of hide preparation, including initial skin preparation, fleshing, scraping, hair removal, making rawhide, softening and graining the hide, tanning hides, smoking hides and cleaning hides. The various portions of the process may or may not leave discrete archaeological signatures. Some of the materials and features utilized in the process include: pegs, fleshers, hafted scrapers, knives, smooth stones, rough stones, sinew or rawhide strands, beamers, and a domed 'smoke house' resembling a sweat lodge. In the research examined for this study only women and girls were mentioned as engaging in hideworking. Although there was one reference made by the Blackfoot Gallery Committee (2001:27) to the fact that 'children' could help and this may or may not include boys in the activity. For specific references see Appendix A, Table A.11.

Lodgepole making is another activity that appears to have been under reported but again could have only been observed at very specific and irregular times. The research indicates that either women or young men could engage in this particular activity. For specific references see Appendix A, Table A.12.

Meat processing has been separated from the activity of butchering because meat processing includes the last stages of food preparation. Within this category slicing, smoking, drying, packing and storing meat were all listed together. According to the data compiled these are activities that were completed exclusively by women, with girls helping and being trained. There were very few references in the sources regarding the types of tools used to complete these activities. Meat drying may or may not have had an associated hearth. Smoking of meat did have an associated hearth and may also have had a smoke structure associated. This structure seems to have been similar in construction to the sweat lodge and the hide smoking structure. For specific references see Appendix A, Table A.13.

Medicines and doctoring are included together with the assumption that the individual who was making the medicines was also active in doctoring activities. Both men and women were found to have engaged in such activities. For specific references see Appendix A, Table A.14.

Miscellaneous gathering is a category of activities that do not take place at the campsite; these activities have been included because the items gathered were returned to the camp for storage and usage. All of the gathering activities were recorded as having been completed by women, and sometimes girls. For specific references see Appendix A, Table A.15.

Miscellaneous manufacturing is a category that contains cradleboard making, saddle making, shield making, and drum making. Each activity was recorded only once. Women made cradles and saddles. Men made shields and drums. For specific references see Appendix A, Table A.16.

Painting is an activity that could be undertaken in many different contexts. Painting included: body adornment, tipi and tipi liner decoration, clothing and bag decoration. The types of tools and materials associated include: coloured soils and rocks, various plants, charcoal, porous bone brushes, and bison tail brushes. Men, women, and girls were all noted as engaging in various painting activities. For specific references see Appendix A, Table A.17.

Pemmican making, according to collected data, was undertaken exclusively by women. Pemmican is made from pounded dried meat and crushed dried berries with hafted stone mauls and metates. Hearths may be associated with the activity to aid in the drying process. For specific references see Appendix A, Table A.18.

Pipe making is an activity that was generally considered to have been a men's activity. However, evidence was found in the literature which shows that women could make their own pipes. For specific references see Appendix A, Table A.19.

Plant/root gathering and processing is another activity that was completed primarily by women and girls, although one reference indicates that children were observed gathering roots (Thwaites 1906:109). Therefore, boys could potentially have been involved in the gathering process. The main tools and features associated were wood digging sticks, knives, containers, hearths, boiling pits, and roasting pits. For specific references see Appendix A, Table A.20.

Many aspects regarding the making and usage of pottery are uncertain, as the technology did not exist at the time Europeans first observed the Blackfoot. The Blackfoot were already using trade pots and kettles. However, there is some evidence that rudimentary pottery was made and utilized and the literature contains some reference to pottery making. The sources state that both women and men made pottery, and indicate that women made everyday pottery while men made pottery for ceremonial use. For specific references see Appendix A, Table A.21.

Quillwork and beadwork was undertaken to decorate clothing, bags and containers. Only women did quill and beadwork. Girls would be trained in preparation for marriage when they would be expected to quill and bead items for their own family. For specific references see Appendix A, Table A.22.

Setting up and packing up the camp was the responsibility of women. For specific references see Appendix A, Table A.23.

Sewing was an activity engaged in by women and girls. The items sewn included the tipi, tipi liner, clothing, containers, bags, and moccasins. Awls, needles, scrapers, fleshers, knives, sinew, paints, hides, rawhide, and willow (*Salix* spp.) measuring sticks could all be used in the process. For specific references see Appendix A, Table A.24.

Sweat lodges were built within the camp or very near to the camp usually for ceremonial purposes. They were constructed from willow (*Salix* spp.) or birch (*Betula* spp.). The data indicate that the sweat lodge may have contained a central hearth or a pit to place heated rocks, which were heated at an exterior hearth just outside of the lodge. Sage (*Artemisia* spp.) and sweetgrass (*Hierochloe odorata*) could have been burned inside the lodge. For specific references see Appendix A, Table A.25.

Tipi cover making was done exclusively by women, with the occasional help of girls. The activity seems to have been communal, with a group of women gathering to make a cover when a woman needed to replace an old, worn tipi cover. The covers were made from prepared bison hides and sewn together with sinew thread and awls. Knives were also used in the process. After contact there was a shift in the materials used to canvas instead of hides, needles and eventually sewing on sewing machines instead of by hand. For specific references see Appendix A, Table A.26.

The items listed on the tool making table were mainly used by women and presumably would have also been manufactured by women. However, this was not always specifically stated in the literature. For specific references see Appendix A, Table A.27.

Travois making was only noted twice. Based on the evidence, women and girls made travois. However, the references did not go into detail regarding how the travois were made and what tools were used in the activity. For specific references see Appendix A, Table A.28.

Utensil and dish making includes the manufacture of bowls, cups, basins, buckets, dippers, spoons, and ladles. These items appear to have been equally made by either women or men, using wood, bison stomachs, rawhide, fat, horns, knives, stones, axes, scrapers, hearths, and boiling pits or pots. For specific references see Appendix A, Table A.29.

Weapons, according to the data, were made exclusively by men. However, boys were recorded as making miniature bows and arrows, a skill that they were taught by their fathers in preparation for becoming men. The types of weapons manufactured were bows and arrows as well as war clubs. The tools associated with the manufacture of these weapons were: bone wrenches, grooved slabs of sandstone, spokeshaves, chisels, and stone hammers. The types of materials reported as used were cherry wood (*Prunus* spp.), sarvis or service (saskatoon) berry wood (*Amelanchier alnifolia*), feathers, lithic cores, and iron barrel hoops. For specific references see Appendix A, Table A.30.

Thirty activity categories were defined for this study. Fifteen of the defined activities were recorded as engaged in exclusively by women and sometimes girls. These activities are: 1) berry gathering/processing 2) bone processing, 3) cooking, 4) driving stakes, 5) giving birth, 6) hideworking, 7) meat processing, 8) miscellaneous gathering, 9) pemmican making, 10) plant/root gathering and processing, 11) quillwork/beadwork, 12) setting up/packing up camp,

13) sewing, 14) tipi cover making, and 15) travois making. It is possible that boys also engaged in berry and root gathering as well as possibly hideworking. Only one of the defined activities, weapon making, was recorded as engaged in exclusively by men and sometimes boys.

Twelve of the defined activities were recorded as engaged in by either gender or by both genders. These activities are: 1) camp butchering, 2) ceremonies, 3) games, 4) grooming and adornment, 5) lodgepole making, 6) medicines/doctoring, 7) miscellaneous manufacture 8) painting, 9) pipe making, 10) pottery making, 11) sweat lodges, and 12) utensil/dish making.

Two of the tables did not contain enough information to determine which gender was predominantly involved in the activity. These activities are: 1) backrest weaving/beds, and 2) tool making. However, based on how the rest of the activities are gendered it can be assumed that these tasks would be predominantly women's activities.

For the most part, adult women and men were the main actors in the activities defined in this analysis. However, there are cases where girls and boys have been noted as engaging in those same activities. In these cases, although specific ages are not discussed, girls and boys were generally involved because they were being trained for adult life and becoming active members of society (Ewers 1958:102-103).

Twenty-four of the defined activities may have taken place, either in whole or in part, inside the tipi. These activities are: 1) backrest weaving/beds, 2) berry gathering/processing, 3) ceremonies, 4) cooking, 5) driving stakes, 6) games, 7) giving birth, 8) grooming and adornment, 9) meat processing,

10) medicines/doctoring, 11) miscellaneous manufacture 12) painting, 13) pemmican making, 14) pipe making, 15) plant/root gathering and processing, 16) pottery making, 17) quillwork/beadwork, 18) setting up/packing up camp, 19) sewing, 20) tipi cover making, 21) tool making, 22) travois making, 23) utensil/dish making, and 24) weapon making.

Five of the activities most likely would have taken place at the campsite but outside of the tipi. These activities are: 1) bone processing, 2) camp butchering, 3) hideworking, 4) lodgepole making, and 5) sweat lodges. As noted above, miscellaneous gathering would not have taken place at the campsite. However, the material gathered would have been used and stored both at the campsite and within the tipi.

4.4.2.6 Segregation of Space within the Blackfoot Tipi

The general floor plan of a Blackfoot tipi was oval, rather than round, with an average diameter of just over approximately 4 m. The interior was the living space of the family who occupied the tipi. On entering through the door, one would find the beds and backrests of the occupants along the liner walls. Near the centre could be the central hearth and to the rear of that may have been the ceremonial altar. However, neither of these features was necessarily present in all tipis. The hearth could either be simply a cleared space, or could have been lined with river cobbles in order to help contain the fire. The altar, if present, was usually simply a cleared space where sage (*Artemisia* spp.), sweetgrass (*Hierochloe odorata*) and other ceremonial offerings could be burned (Figure 4.2) (B. HungryWolf 1982:116-117; Kidd 1986:122; Wissler 1910:105).

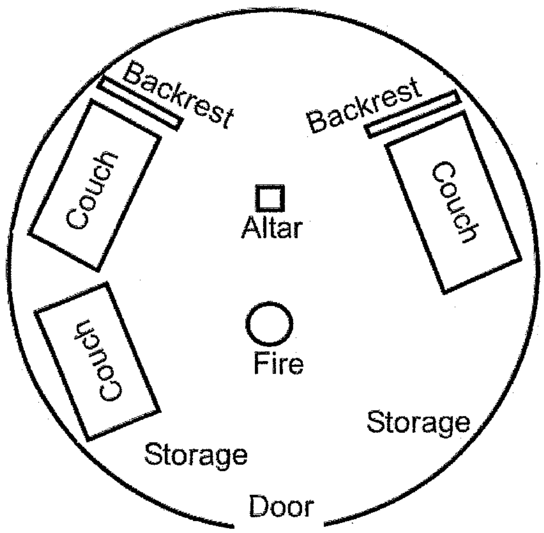

Figure 4.2. Basic floor plan for the interior of a tipi (adapted from Wissler 1910:105).

Personal items were stored in hide bags and containers along the edges of the tipi liner, out of the way (B. HungryWolf 1982:114). They also served to hold the liner down in order to reduce drafts inside the tipi (B. HungryWolf 1982:114). Items of daily use, such as cooking implements and riding gear were usually easily accessible and stored just inside the door (B. HungryWolf 1982:115; Kidd 1986:122; McClintock 1968 [1910]:383; Wissler 1910:105-106); food and cooking utensils could also be stored between the beds (Grinnell 1913:197-198, 2003 [1892]:199; W. Hanna 1988:33-34; B. HungryWolf 1982:114). Various items could also be hung from the lodgepoles in hide bags (McClintock 1968 [1910]:383). Household ceremonial objects, such as sacred bundles and ceremonial necessities like smudges and paints, hung at the back of the tipi in the place of honour (B. HungryWolf 1982:114-117; Wissler 1910:105-106), over the bed of the male and female primary occupants of the tipi. The floor of the tipi, where people sat and slept was carpeted with hides that still had hair on them (B. HungryWolf 1982:114). The women's interior work area was towards the centre of the tipi, near the hearth (B. HungryWolf 1982:116-117). Men would keep the smoking equipment, including tobacco and pipes at the head of their bed (B. HungryWolf 1982:116-117).

At night, interior space was used for sleeping, during which time married couples could share a bed. In the case of multiple wives or single adult children still residing within the tipi, females would have beds to the left of the door and males would have beds to the right of the door. During the day, the main reported activities that may have taken place within the tipi were cooking and ceremonies. For such activities, there was a structure to how the interior space was utilized based on the sex and/or gender of individual inhabitants.

On entering the tipi, women occupied the spaces to the left of the door and men occupied the spaces to the right. This fact is confirmed by Ruth Little Bear in her statement, "In my grandmother's tipi I had my own bed, complete with willow backrests, right at the foot of hers on the south side where the women sit" (Ruth Little Bear in B. HungryWolf 1996:12). If it is assumed that the door of this tipi faced to the preferred east, then the south side would be to the left of the door. In the ethnographic research conducted for this study, references to this spatial segregation of the tipi have been found in the works of Grinnell (2003 [1892]:199), B. HungryWolf (1982:118-119), Kidd (1986:122), McClintock (1968 [1910]:28-29, 77), and W. Hanna (1988:33-34). There are very few references to the places where it would be acceptable for children to sit. McClintock (1968 [1910]:30) implied that children would be sitting with the women; this arrangement was observed in various photographs of a Blackfoot Big Smoke or All Smoke Ceremony that was recorded for the Glenbow Museum in 1959 (Restricted Photos, Glenbow Archives, Calgary, NA-991, 1959). In these photographs, the men were sitting to one side of the ceremonial altar, while the women and children were clearly seated together on the opposite side of the altar.

One important point to note is that often the space within the tipi has been divided into three main spaces, the left, right and rear, with the left as women's space, the right as men's space, and the rear as the space belonging to the senior male of the tipi who was also considered the head ceremonialist (Figure 4.3) (Oetelaar 2000:40). However, the interior space of a Blackfoot tipi should in fact be divided only twice with the left side being women's space and the right being men's space (Figure 4.4); as evidenced in *Blackfoot Persons* (A. Kehoe 1995), women and men shared this ceremonial space. The fact that both the female and male head of the household carry the same status is also evidenced in a statement made by James E. Child (Duvall 1904-1911:1121), "The wife of the pipe man should be honored and given a seat not low [*sic*] than that of her host."

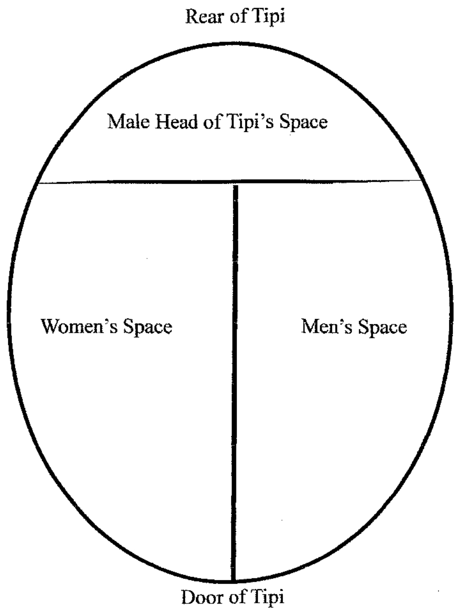

Figure 4.3. Interior of the tipi, divided into three areas.

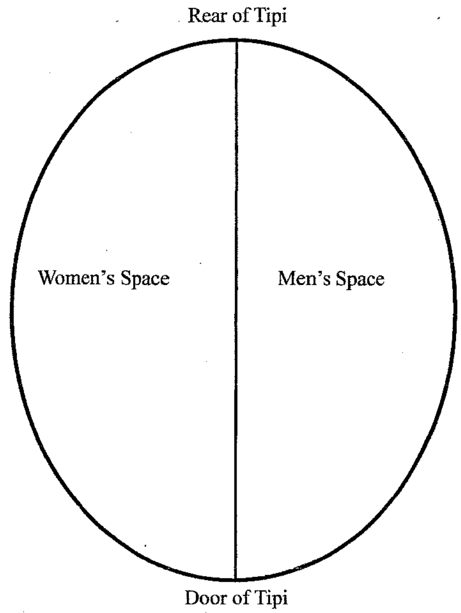

Figure 4.4. Interior of the tipi, divided into two areas.

4.4.2.7 Segregation of Space within Other Plains Cultures

As a cautionary note, it should not be assumed that all Plains cultures adhered to the same structuring of space. According to Denig (Hewitt 2000:142), the interior spaces of the tipi were structured very differently for the Dakota Sioux. In a diagram of the interior of a tipi, Denig (Hewitt 2000:142) noted that from the left of the door the first space was occupied by the grandfather or uncle of the owners. The space closer to the rear was reserved for women occupants and their visitors; the rear was for brothers-in-law and male visitors (Hewitt 2000:142). On entering a Dakota Sioux tipi, the space to the right of the door was reserved for the grandmother, and still on the right but closer to the rear was the space reserved for the heads of the household, both the man and the women, directly to the rear of them was space for their children (Hewitt 2000:142).

Similarly, Pond ([1908] 2002) reported for the Dakota that the rear of the tent was the place of honour and that the man and woman heads of the household generally occupied one side of the tipi. Pond ([1908] 2002) did report that the woman would be closer to the doorway, and closer to the storage spaces just inside the doorway. However, Pond ([1908] 2002) also noted that none of the spaces within the Dakota tipi were restricted and that if men were not in the way a woman could use whichever of the interior spaces that she wanted.

For the Cheyenne, Grinnell (1923) reported that the place of honour was to the rear of the tipi. He also noted that the family, including the men, lived to the left of the door (Grinnell 1923).

The research presented in this section indicates that the seemingly clear spatial segregation that has been found in the cultural study of the Blackfoot can not be said to hold of all Plains cultures. Further detailed culture by culture research is required in order to determine which Plains cultures may have segregated space by gender, and which may have segregated space by other criteria.

4.5 Summary

This chapter discussed the application of ethnography in household spatial analysis. The task differentiation model that was presented in the previous chapter was further discussed and modified for use in the present study. The ethnographic and cultural research that was completed for this study was presented. It was established that the research had focused on the Blackfoot because, while the campsites used in the spatial analysis cannot be directly linked to the Blackfoot, the sites are mainly Protocontact period to Contact period occupations and the Blackfoot were known to have inhabited the region of the sites during the Contact period.

The study focused on one specific culture, in order to establish a gendered task differentiation that was directly applicable to one culture and to establish a model of gendered space that was specific to one culture, rather than assume a pan-Plains approach, which as shown in section 4.4.2.7 should not be done since not all Plains cultures followed the exact same cultural processes.

The task differentiation analysis found that Blackfoot culture followed a gendered model for task differentiation. The ethnographic research also found that in Blackfoot culture the interior spaces of the tipi were divided in half according to the gender of the inhabitants. If the space within the tipi was in fact conceptually segregated by societal norms and the activities that were carried out within the spaces were based on gendered task differentiation, then the activities that took place within the tipi should have been patterned according to the gender of the individuals who occupied the tipi. The rest of the thesis will examine an archaeological sample of tipi rings, in order test whether or not these cultural practices can be seen archaeologically.

CHAPTER FIVE

TIPI RING SPATIAL ANALYSIS

5.1 Introduction

The archaeological sample used in this analysis comes from the Little Bow Reservoir - Mosquito Creek Segment project (Archaeological Survey of Alberta (ASA) Permit #2000-082, 2001-167). This project was an Alberta Infrastructure historical resources impact mitigation completed as part of the Little Bow Reservoir project (Landals and Tischer 2001:1). Mitigation was completed at eight archaeological sites that were slated to be inundated by flooding of the reservoir (Landals and Tischer 2001:1). The mitigation was conducted as a joint project by Fedirchuk McCullough & Associates, Ltd. and the Peigan Nation/Treaty 7 Coalition (hereafter referred to as FMA) under the direction of Alison Landals. Of the eight sites investigated in the initial two years of the project, five were examined in this analysis (EbPi-51, EbPi-52, EbPi-53, EbPi-61, and EbPi-75).

In order to conduct an engendered spatial analysis of tipi rings from the Little Bow Reservoir study area, ten tipi rings from the five sites have been selected. These tipi rings were selected for analysis because they have been completely excavated and discrete cultural occupations have been discerned by the project excavators and analysts.

This chapter will introduce the location of the project, the sites under examination and the selected tipi rings from each site. The excavation and analysis methodologies used for the project will be presented. The model, as established for this study, for the gendered spatial distribution of artifacts within the household space on the northern Plains will be presented. Then an explanation of how the spatial analysis was conducted will be presented. This will be followed by a brief overview of the excavation and analysis history for each stone circle, the results of the assessment of feature doorway location, and the spatial analysis.

All ten of the stone circles used in this analysis have been determined to be the remains of conical habitation structures known as tipis. Therefore, they can be termed tipi rings. However, in order to be consistent with the terminology used by FMA the features will be referred to as stone circles in the spatial analysis.

5.2 Physical Area and Location of Sites

The Little Bow Reservoir is located in southern Alberta approximately 20 km southwest of Vulcan, Alberta (Figure 5.1). The sites discussed in this analysis were located within the Mosquito Creek valley (Figure 5.2) and since flooding of the reservoir in the spring of 2003 all are now below the full supply line of the reservoir (Landals and Tischer 2001:1) (Figure 5.3).

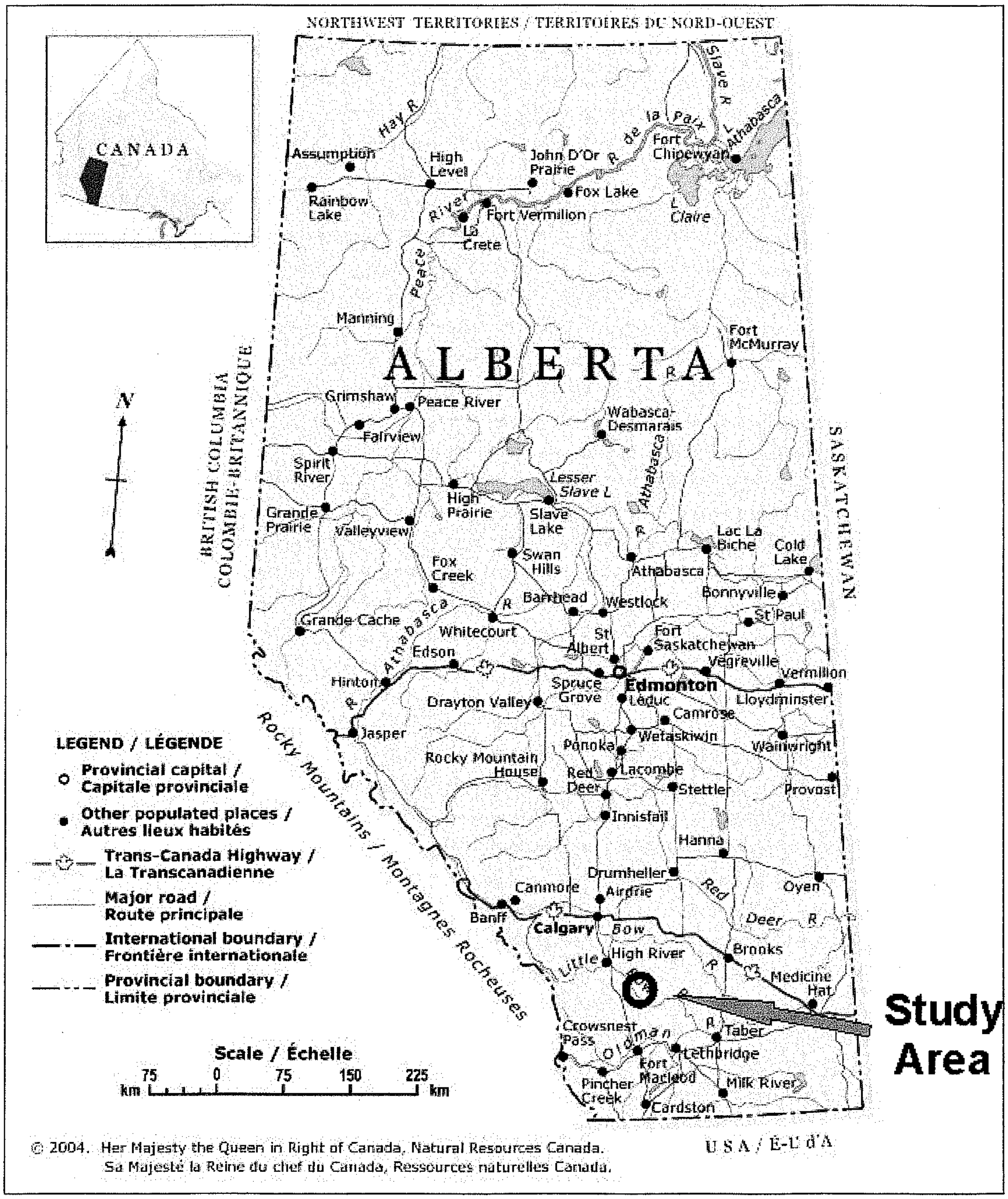

Figure 5.1. Location of study area.
(adapted from: http://atlas.gc.ca/site/english/maps/reference/provincesterritories/alberta/referencemap_image_view)

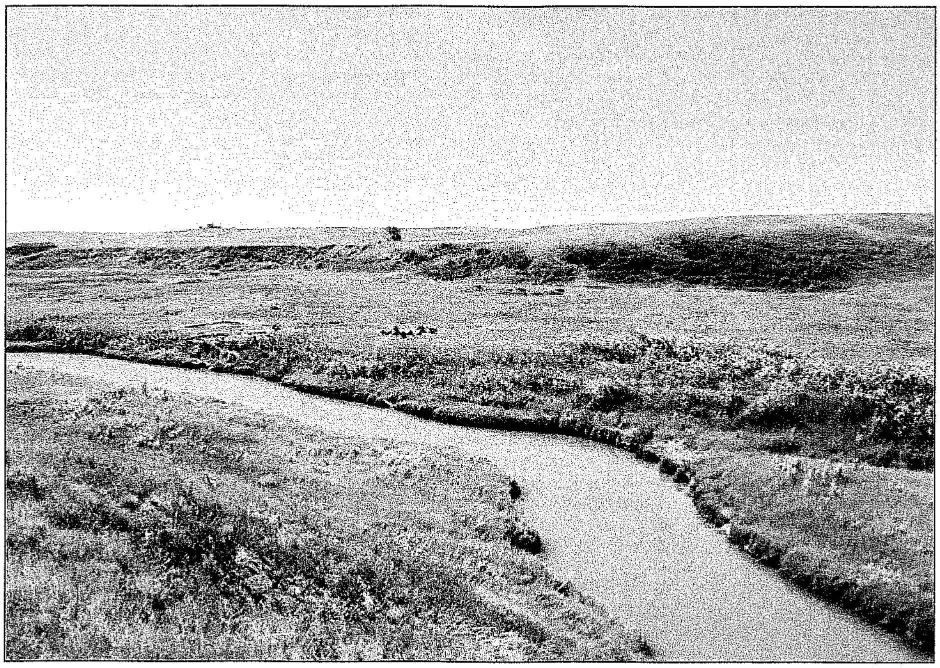

Figure 5.2. Example of typical topography within the project area.

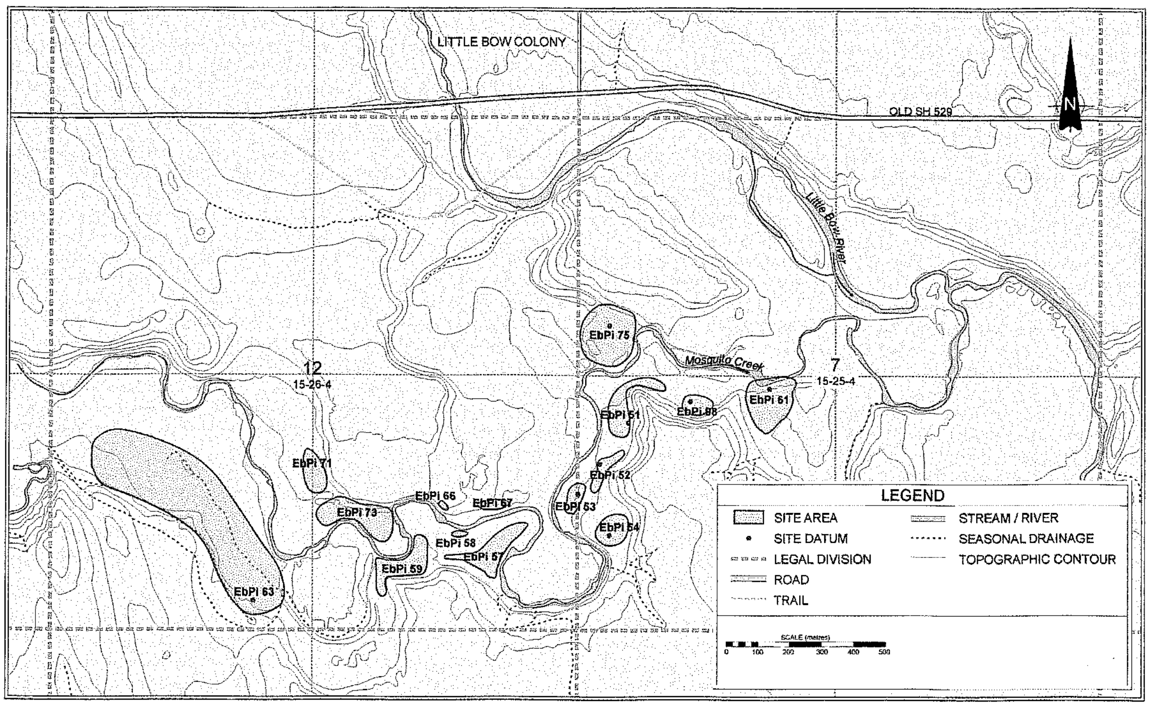

Figure 5.3. Location of sites impacted by the Little Bow Reservoir Project – Mosquito Creek Segment. Sites EbPi-51, EbPi-52, EbPi-53, EbPi-61, and EbPi-75 were selected for use in this study (adapted from Landals and Tischer 2001:2).

Located on the east side of Mosquito Creek, EbPi-51 was situated on an intermediate terrace that had never been cultivated (Landals and Tischer 2001:5) (Figure 5.3). The only surface disturbance at the site was in the form of vehicle tracks and grazing (Landals and Tischer 2001:5). The site was on the valley bottom with steep valley walls located to the east and south, sheltering the site from wind (Landals and Tischer 2001:5). On the north side the site was protected by "erosional outliers in the Little Bow River valley" (Landals and Tischer 2001:6). The site was most exposed on the west side but was somewhat protected by the terrace on the opposite side of Mosquito Creek (Landals and Tischer 2001:6). The tipi rings from the site used in this analysis are Stone Circle 2, Stone Circle 4, and Stone Circle 8 (Figure 5.4).

EbPi-52 was located to the south of EbPi-51 and was also on an intermediate terrace on the east side of Mosquito Creek (Landals and Tischer 2001:53) (Figure 5.3). Similar to EbPi-51, EbPi-52 was most sheltered on the south and east, and moderately sheltered on the north and west sides (Landals and Tischer 2001:53). The terrace that the site was located on had never been cultivated. However, historic and modern ranching activities had caused some localized disturbances (Landals and Tischer 2001:56). Any such disturbances that may have affected the tipi rings used in this analysis will be discussed in the spatial analysis section of this chapter. One tipi ring, Stone Circle 8, was selected for use in this analysis (Figure 5.5).

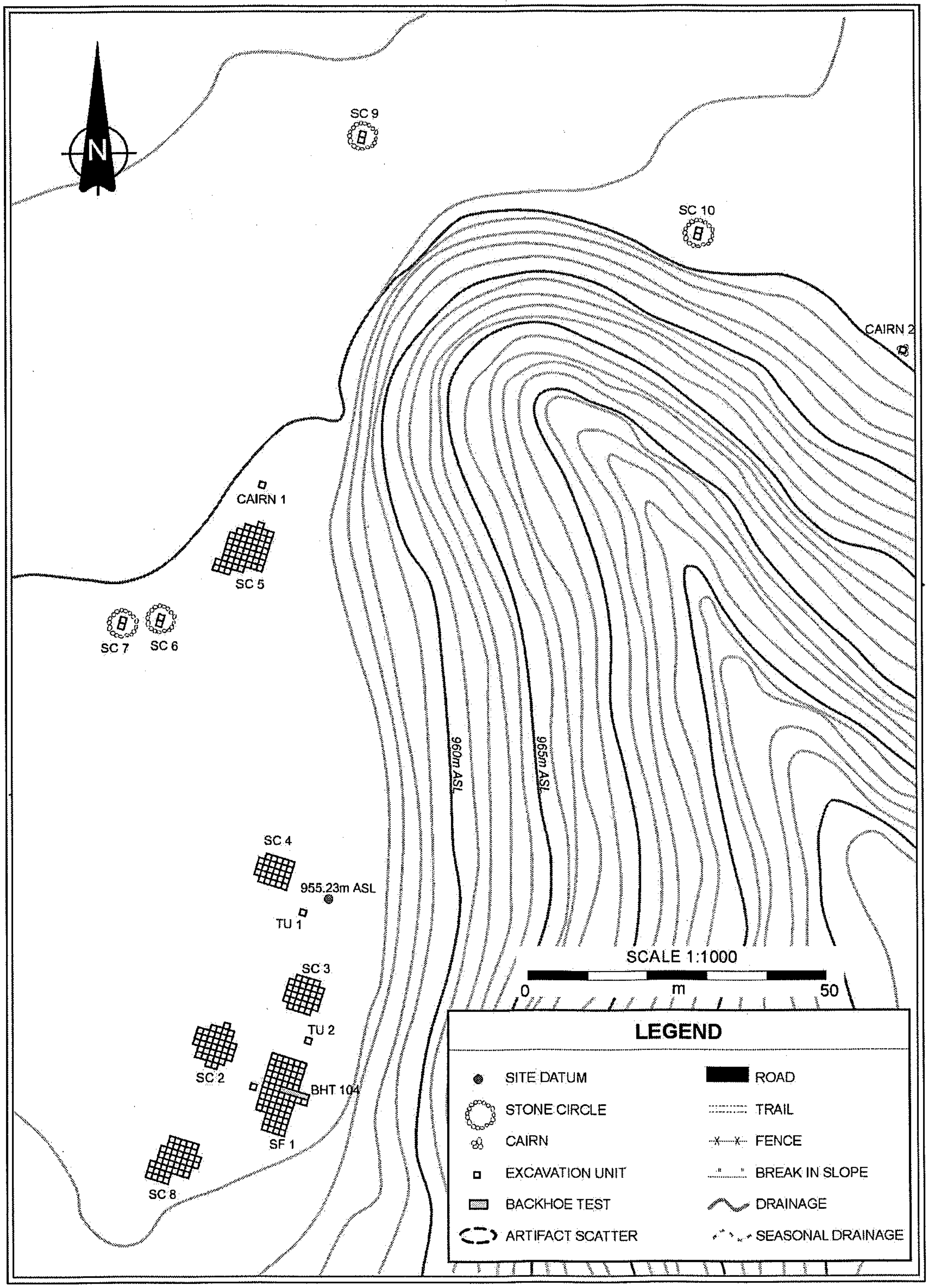

Figure 5.4. EbPi-51, Site map and excavation plan (adapted from Landals and Webster 2002:6).

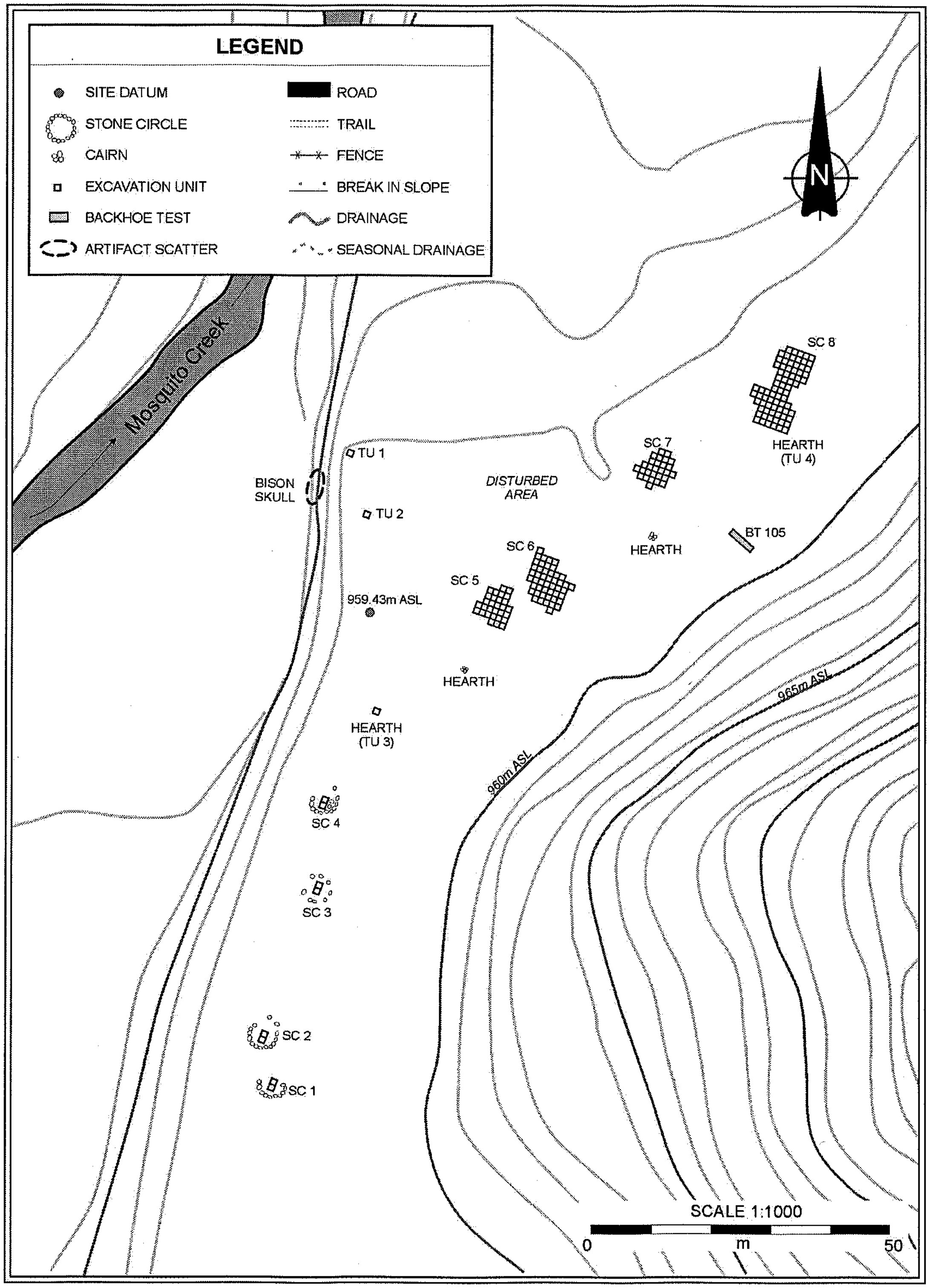

Figure 5.5. EbPi-52, Site map and excavation plan (adapted from Landals and Webster 2002:9).

EbPi-53 was situated southwest of EbPi-52 on a low terrace (Landals and Tischer 2001:97) (Figure 5.3). The site was sheltered on all sides due to its low elevation and the nature of the surrounding topography (Landals and Tischer 2001:97). The terrace had never been cultivated and had suffered limited disturbance from ranching activities (Landals and Tischer 2001:97-100).The tipi rings from the site used in this analysis are Stone Circle 1 and Stone Circle 6 (Figure 5.6).

EbPi-61 was located on an intermediate terrace on the south side of Mosquito Creek, a few hundred metres upstream of its confluence with the Little Bow River (Landals and Tischer 2001:134) (Figure 5.3). The site was located on an abandoned oxbow channel. The high walls of the channel sheltered the site on the south, east, and west sides (Landals and Tischer 2001:134-137). On the north the site was somewhat sheltered by the terrace of the Little Bow River (Landals and Tischer 2001:137). The area that the site was located on had never been cultivated and only minimal grazing and vehicle disturbance was noted by the excavators (Landals and Tischer 2001:137). One tipi ring, Stone Circle 1, was selected for use in this analysis (Figure 5.7).

EbPi-75 was on a low terrace on the northwest side of Mosquito Creek, across the creek from EbPi-51 (Landals and Tischer 2001:206) (Figure 5.3). The site was described as being in a "well sheltered, somewhat 'hidden' location" (Landals and Tischer 2001:206). The terrace had never been cultivated. However, localized disturbance caused by historic and recent ranching activities was noted by the excavators (Landals and Tischer 2001:210). The tipi rings

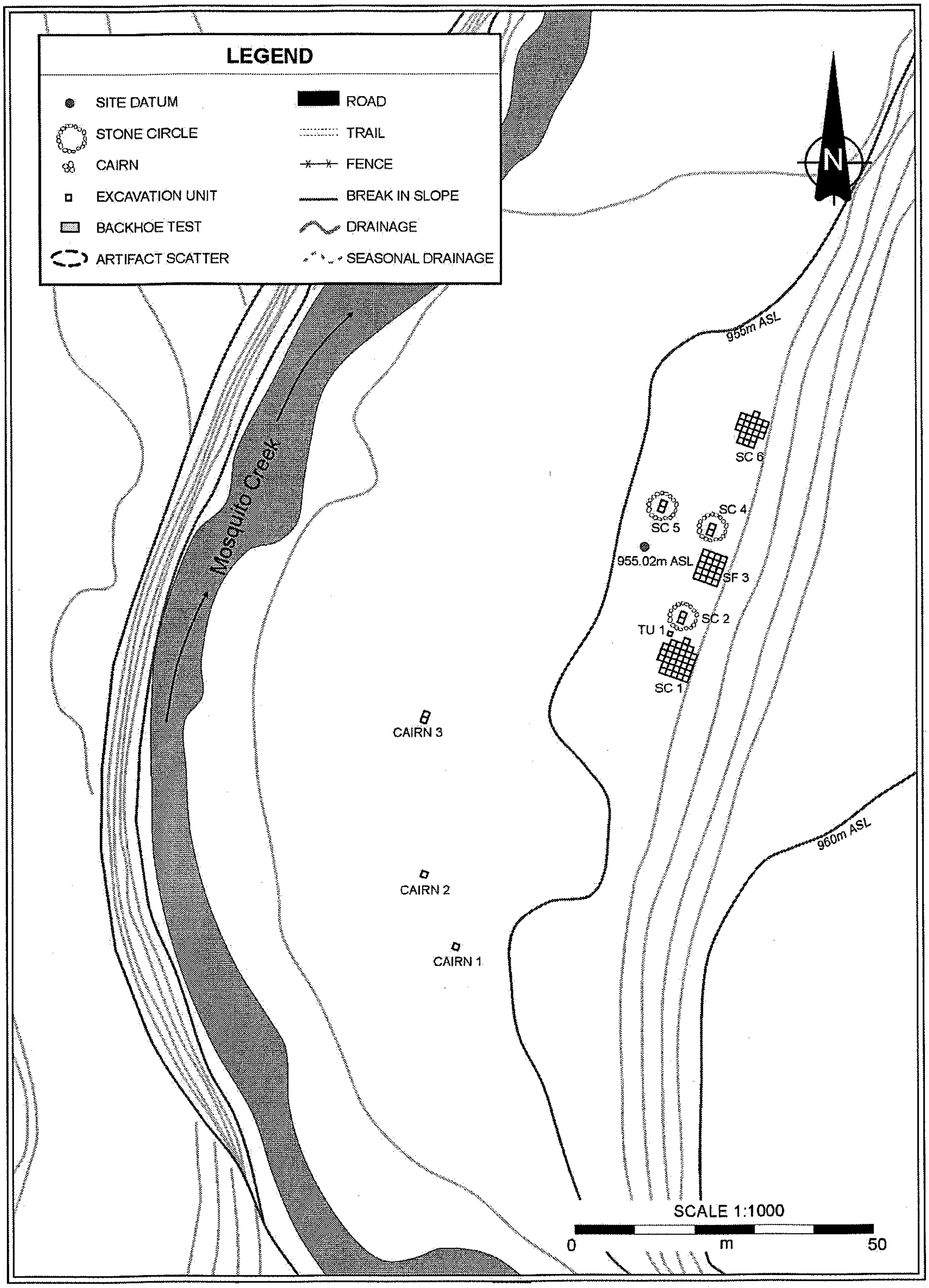

Figure 5.6. EbPi-53, Site map and excavation plan (adapted from Landals and Webster 2002:12).

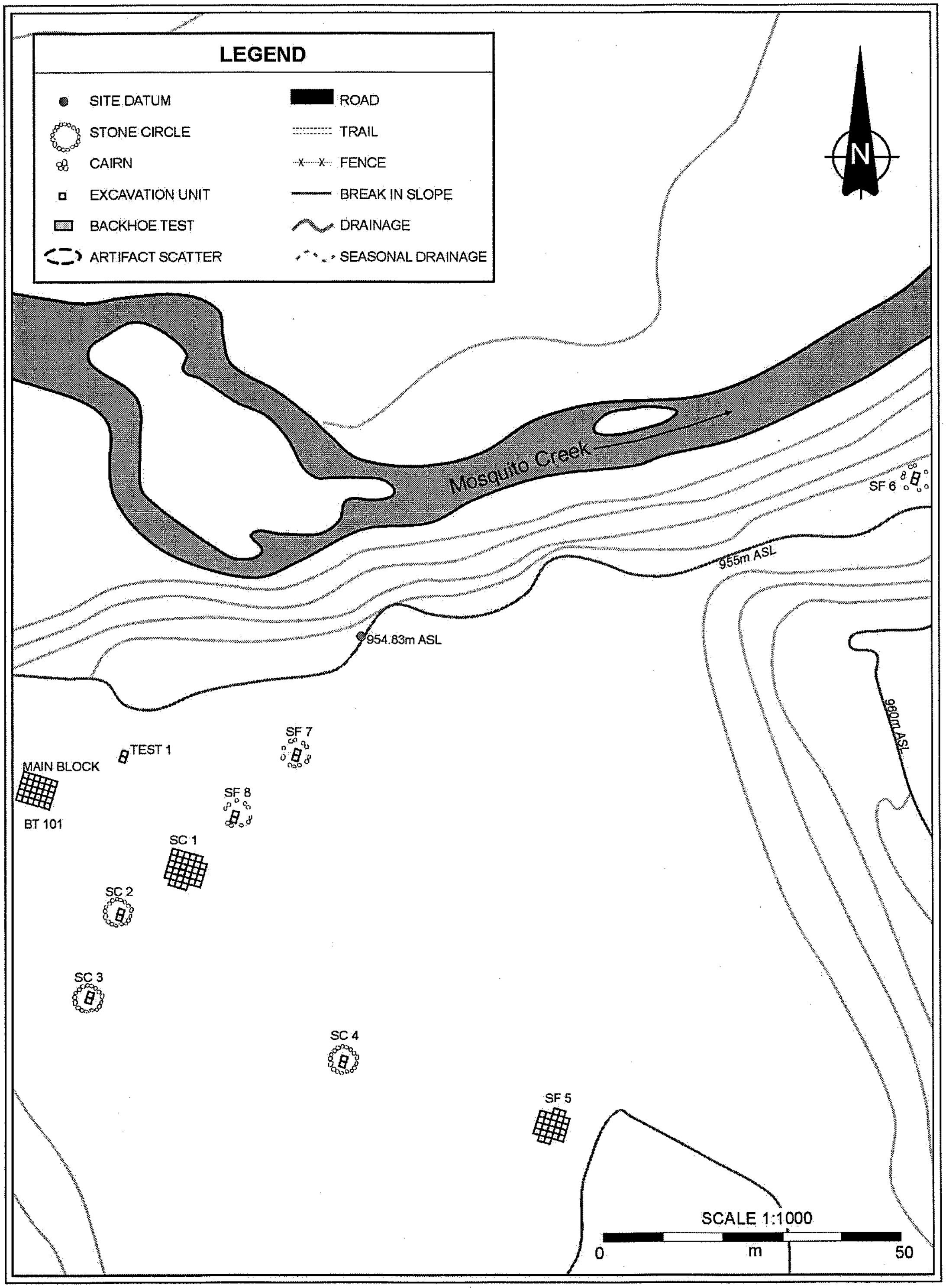

Figure 5.7. EbPi-61, Site map and excavation plan (adapted from Landals and Webster 2002:70).

from the site used in this analysis are Stone Circle 4, Stone Circle 5, and Stone Circle 9 (Figure 5.8).

5.3 Excavation and Analysis Methodology

All five of the archaeological sites used in this analysis were located and tested in 1989 (ASA Permit #89-82) by Bison Historical Services Ltd. Further testing and excavation was undertaken in 2000 (ASA Permit #2000-82) and 2001 (ASA Permit #2001-167) by FMA. During the 1989 testing program, EbPi-51 Stone Circle 2 and EbPi-61 Stone Circle 1 were each impacted by a one by one metre test unit. Specific details are discussed for each stone circle individually. The methodology for 2000 and 2001 testing, excavation and analysis followed slightly modified procedures first established for the Oldman River Dam project, a previous Alberta reservoir mitigation (Landals and Tischer 2001:3). Each stone circle was mapped in detail and assessed using a one by two metre unit near the centre of each ring (Landals and Tischer 2001:3). The artifacts recovered from these tests were included on the catalogue sheets provided by FMA. Excavation of the stone circles was completed by shovel shaving and/or trowelling one by one metre excavation units.

During the analysis, the cultural material from each site was separated into Cultural Units. The concept of a Culture Unit (CU) was defined as part of the Oldman Dam project. A CU is described as "groups of cultural material recovered from a site defined by an investigator, generally on the basis of their stratigraphic and spatial context" (Dau 1997:467). In practice the CU "is used to

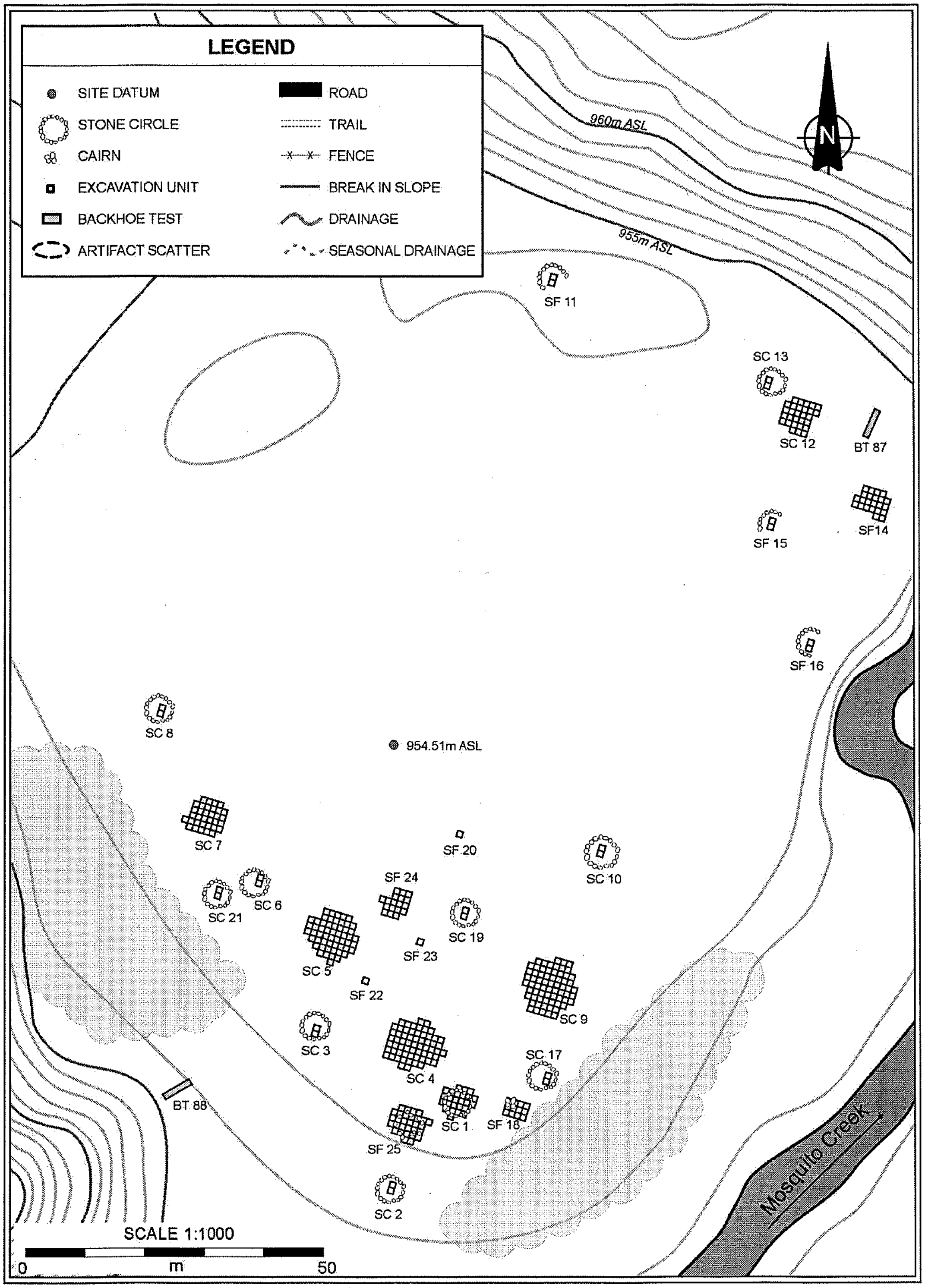

Figure 5.8. EbPi-75, Site map and excavation plan (adapted from Landals and Webster 2002:76).

group associated levels from a single excavation block. Depending on the proximity of excavation blocks to each other, several CMUs [CUs] may be grouped together to form an occupation. Occupations of similar age and cultural affiliation may then be grouped into a larger integrative unit" (Van Dyke 1994:11). The cultural material analysis from the Little Bow Reservoir study area followed this concept. Each CU for the tipi rings used in this analysis represented an observed occupation level at the site, but specific to the feature in question. Any specific stratigraphic complications that arose from this method of analysis will be discussed in the analysis of each feature.

5.4 A Model for a Gendered Spatial Distribution of Artifacts Within Household Space on the Northern Plains

As established in Chapter Four, on entering the tipi the women's space was to the left and the men's space was to the right. The expected frequencies of artifact distribution would follow the nature of the activities and frequency of activities that members of each gender would potentially have been undertaking within the household space. As established through the Blackfoot ethnographic and historic documentation research discussed in Chapter Four and shown in the task differentiation tables listed in Appendix A, women and sometimes girls would be expected to be engaged in the activities backrest weaving and bed making, berry gathering/processing, bone processing, cooking, driving stakes, giving birth, hideworking, meat processing, miscellaneous gathering, pemmican making, plant/root gathering and processing, quillwork/beadwork, setting up/packing up camp, sewing, tipi cover making, tool making and travois making.

Men and sometimes boys could be expected to engage in the activity weapon making. A number of activities were established as activities that could have been engaged in by either gender. These activities were camp butchering, ceremonies, games, grooming and adornment, lodgepole making, medicines/doctoring, miscellaneous manufacture, painting, pipe making, pottery making, sweat lodges, and utensil/dish making.

In Chapter Four it was determined that the activities which could have taken place, either in whole or in part, within the tipi were backrest weaving/beds, berry gathering/processing, ceremonies, cooking, driving stakes, games, giving birth, grooming and adornment, meat processing, medicines/doctoring, miscellaneous manufacture, painting, pemmican making, pipe making, plant/root gathering/processing, pottery making, quillwork/beadwork, setting up/packing up camp, sewing, tipi cover making, tool making, travois making, utensil/dish making, and weapon making.
Of these activities 15 were recorded as completed exclusively by women and girls, one was recorded as completed exclusively by men and boys, and eight were recorded as possibly being completed by men, boys, women, or girls. All of these activities have the potential to have been completed within the tipi rings used in this analysis. However, such an occurrence is unlikely and not expected, especially due to the seasonally restrictive nature of some of the activities.

The model that has been established for this study and the spatial analysis that was used to test the validity of the model have been organized in such a way as to highlight overall patterns in artifact disposal and dispersal within the household spaces of the tipi. Five basic artifact classes were established during the analysis stage of the project. They are: 1) ceramics, 2) faunal material, 3) fire broken rock (FBR), 4) historic material, and 5) lithics.

Four of these artifact classes were used in the spatial analysis. Prior to setting up the model it was determined that only four of the ten tipi rings selected for the spatial analysis contained historic material. Much of the historic material recovered from these tipi rings may have been intrusive and related to historic and recent ranching activities within the area and not the tipi ring occupations. For this reason it was determined that the spatial analysis should not include the historic material. Therefore, an artifact class of historic material has not been included in the model. The model does include ceramics, faunal material, FBR, and lithics. Each of these artifact classes were compared against the activities that each gender could be expected to engage in within the tipi and the associated archaeological remains that would be expected to be recovered.

The task differentiation tables (Appendix A) indicate that both women and men may have been involved in the manufacture of ceramics (Table A.21). Pottery could have been used in both everyday cooking, storage, and ceremonial contexts. Men engage in ceremonial activities but not cooking, while women engage in both activities as well as take care of food storage. Therefore, ceramics should be more strongly associated with women than with men. The distribution of ceramics across space should be uneven, with more ceramics concentrated on the women's side of the tipi.

Assessing the possible distribution of faunal material is complex. On the surface one would assume that faunal material should be more associated with women based on meat preparation and cooking activities. However, this assumption is complicated by the fact that everyone within the space will be consuming meat. Also, in terms of ceremonial activities and weapon manufacture, faunal remains could be associated with the men's side of the space. Therefore, the model hypothesizes that faunal material is expected to be evenly distributed. However, if the spatial analysis should find that faunal material is unevenly distributed, one would expect there to be more material on the women's side. This expectation is based on the greater volume of activities that women engage in within the household space.

Fire broken rock is associated with the often centrally located hearth and both cooking and heating. FBR is created by heating and cooling action on rocks. FBR can be associated with the hearth as hearth containment rocks, as heating stones used to boil water in a pit or pot, or as stones on which meat was roasted. While these activities are associated with women, the hearth is generally centrally located and FBR may be dispersed evenly around the hearth. The model will state that FBR should be evenly distributed between the men's and women's side of the tipi. However, if the spatial analysis should find that FBR is unevenly distributed, one would expect there to be more material on the women's side, again based on the greater volume of activities that women engage in within the household space.

Lithics are expected to be evenly distributed across the living floor of the household space. Men may be manufacturing and refurbishing weapons, while women may be manufacturing and refurbishing their tools during use within the tipi or for use in activities which will take place outside of the tipi. The model will state that lithics are expected to be evenly distributed. However, if the spatial analysis should find that lithics are unevenly distributed, one would expect there to be more material on the women's side. This expectation is based on the greater volume of activities that women engage in within the household space.

The basic model that has been established for the spatial analysis is based on the ethnographic data collected in Chapter Four and tabulated in Appendix A. The basic model hypothesizes that: 1) ceramics will be unevenly distributed across the occupation floor, with a higher concentration of artifacts recovered from the women's space, 2) faunal material will be evenly distributed across the occupation floor, 3) FBR will be evenly distributed across the occupation floor, and 4) lithics will be evenly distributed across the occupation floor.

The basic model recognizes the expectations of artifact association for each gender. However, even though the task differentiation assessment indicates that men may have engaged in a number of activities at the campsite women were shown to have engaged in more activities. Therefore, while the basic model is being tested, secondary observations will also be recorded. If the distribution of faunal material, FBR, and/or lithics is found to be uneven, then whether or not the bulk of the distribution was recovered from the women's or the men's side will be noted. These secondary requirements of the model will be combined with the basic model to form the model for gendered spatial distribution.

5.5 Spatial Analysis Methodology

For the spatial analysis conducted in this thesis FMA supplied final catalogue sheets from the 2000 and 2001 site testing and excavation program. Archaeological material removed from EbPi-51 Stone Circle 2 and EbPi-61 Stone Circle 1 in the 1989 survey and testing program were recorded in the survey report as gross artifact counts (Head et al. 1990) and have been added to the data used in the spatial analysis. Additional information for the analysis was provided through the interim project reports (Landals and Tischer 2001; Landals and Webster 2002). As the final report was unavailable at the time of this study, additional information was accessed through discussion with Alison Landals. Of the numerous excavated stone circles from the Little Bow Reservoir study area, ten were selected for this analysis. These stone circles were selected based on the determination that they were in fact tipi rings and therefore the remains of domestic habitation structures, as established by FMA. Additional criterion considered for selection of tipi rings was based on stratigraphy and density of artifacts. Finally, those tipi rings where the principal investigator was most confident that single occupations had been identified and could be analyzed discretely were selected.

Once the tipi rings had been selected the next step in the analysis was to determine where the doorway of the tipi had been while the feature was in use. As discussed by M. Wilson (1995:187), the assignment of the position of the doorway is critical to the analysis. As noted in Chapter Four, Section 4.4.2.6, if the spatial distribution between women's and men's 'sides' is to be found these 'sides' will be aligned with the doorway.

This portion of the analysis has followed information put forward by previous researchers as to the ideal and practical placement of the tipi doorway by historic Plains groups. The placement of the tipi door was summarized and discussed previously in Chapter Two, Section 2.2. Based on that information a set of eight criteria was established in order to assess the best possible doorway location in each of the tipi rings used in this analysis. The primary assumption for door placement was based on the fact that the ethnographically preferred direction to face the doorway to the tipi was to the east (Campbell 1915:689, 1927:97-98; Dorsey 1889:175; Mooney 1910:759). However, the placement of the door to the east was actually 'to face the rising sun' (Brumley 1983:177; T. Kehoe 1985 [1960]:455; M. Wilson 1995:179). Therefore, on the northern Plains a doorway that faces the rising sun will most likely be situated more to the southeast than toward the cardinal direction of east.

While facing the door to the rising sun may have been preferred, this may not always have been practical. Therefore, a number of situational factors that may also have affected the placement of the doorway were also considered. Such factors include wind direction, geographic features such as valley walls, and layout of the entire campsite. While assigning the location of the doorway to a habitation structure which was removed during site abandonment is difficult, each tipi ring used in this analysis was subject to a doorway analysis that included eight criteria. The criteria used to determine the best fit for the location of the doorway for each tipi ring were: 1) possible gap in the ring rocks indicating a doorway gap, 2) potential for a greater number of rocks at the back of the ring to brace the tipi against wind, 3) shape of the ring, with the long axis being the doorway axis, 4) hearth centrally located, 5) location of geographic features, such as valley walls and creek channel, 6) overall camp organization, 7) artifact flow outside of the tipi which conforms to an exit in the structure, and 8) the impression of doorway location as expressed by the principle investigator.

Based on the assumption that the preferred placement of the door will be to the southeast, except in extenuating circumstances which may include various combinations of the above factors, a doorway for each tipi has been assigned to each stone circle. The breakdown of the criteria for each stone circle is provided in Appendix B. The listing of the criteria for each stone circle generally points to the door having been in a certain location; the assignment of each doorway was based on a 'best fit' model.

Once a doorway location for each stone circle had been established a front to back axis line was drawn over each feature map. This axis was used to separate the left and right sides of the tipi, excavation units on the left side of the tipi being assigned as women's space and excavation units on the right side being assigned as men's space. In the cases where the front to back axis line transected an excavation unit the line generally did not equally divide the unit and the unit was assigned as either women's or men's space based on which side was larger, the left or the right.

It was determined that the best way to spatially examine the data was by gross count of artifacts per unit. This level of analysis was selected in order to complete the spatial analysis at a basic level. On completion of this analysis the results will then be applicable as a benchmark for further analyses that take other factors into consideration. Such further analysis could separate out various size classes and/or complete a point pattern analysis of *in situ* artifacts. In addition further studies could examine the gendered spatial distribution of tools. However, such an analysis would have to also conduct a detailed analysis of tool function and usage by gender. For example, the task differentiation analysis completed in Chapter Four found that projectile points, which are generally considered to be male tools, were also associated with women. As noted in Appendix A, Table A.9, a projectile point was used during childbirth to cut the umbilical cord. This activity was determined to have been a women's activity, therefore, in this instance a projectile point was associated with women's activities.

Once the basic unit of analysis was established as the gross counts of artifacts, by artifact class, per unit, the next step was to organize the raw data. The data from the catalogue sheets were organized by site, stone circle, artifact class, and cultural unit. The gross total artifacts for each excavated unit was then tabulated and placed over the excavation grid. The distribution maps created during this portion of the analysis will be used in the spatial analysis and are located in Appendix C.

With the placement of the doorway established and the distribution maps completed, initial assessment of interior spatial patterning was undertaken. Basic observations were made as to interior gendered patterning. The distribution maps were visually examined and preliminary conclusions were drawn as to the spatial distribution of artifacts within the stone circles used in this analysis. A discussion of the results of this analysis is included below for each stone circle in this analysis.

In order to quantify the observed results a one-sample chi-squared goodness of fit analysis was then completed for each artifact class at each stone circle. The one-sample chi-squared goodness of fit statistical test was selected because the statistic assesses the correspondence between actual and modeled distributions (Shennan 1997:104). The correspondence that is being assessed in this analysis is whether or not the artifacts were evenly distributed across the occupation floor, or if the distribution of artifacts across the living floor was uneven.

The one-sample chi-squared goodness of fit statistical test "measures departures of expected from observed values" (Shennan 1997:113). "A sample is compared to a specified theoretical population and a test is made of how good the correspondence or 'fit' is between these two distributions" (Shennan 1997:104). The samples used in this analysis were the gross counts for each artifact class in each stone circle, organized by excavated one by one metre unit. These values are shown on each distribution map in Appendix C.

In order to complete the spatial analysis the interior floor and the area within the ring rocks of each stone circle were divided into two sides, the men's and the women's, based on the assessment of structure doorway location (Appendix C). In order to complete the statistical analyses the total number of observed artifacts on the men's side and the total number of observed artifacts on the women's side for each distribution map was placed on a contingency table. Then the expected values for a random distribution for both men's and women's sides were placed on the contingency table. In spatial analysis a random distribution is considered to be a non-cultural distribution (Hodder and

Orton 1976:30-31). In this analysis the spatial patterns under examination are the distribution and weighting of artifacts on each side on the living floor, with the expectation that gendered patterning of artifacts will produce uneven results. Therefore, instead of random distributions the expected result for non-gendered spaces will be an even distribution.

The formula for the chi-squared is given by

$$\chi^2 = \sum \frac{(O-E)^2}{E}$$

where:
O is the observed number of artifacts per unit,
E is the expected number of artifacts per unit,
and χ^2 is the symbol representing chi-squared,
using the Greek letter 'chi' [Shennan 1997:106].

Once the statistical test was completed the results were tested for significance (Shennan 1997:107). In order to do this two pieces of further information were required: the level of significance to be used for the analysis and the degree of freedom associated with the sample (Shennan 1997:107). These were used to compare the result of the chi-squared with the percentage points of the chi-squared distribution (found in Table F; Shennan 1997:422-423). The level of significance selected for this analysis is $\alpha = 0.05$. This level of significance was selected because at this level the null hypothesis will be accepted as true unless the "data are so unusual that they would occur only 5 times in 100 or less" (Shennan 1997:54).

The degree of freedom was calculated by the formula $v = k - 1$ where v (Greek letter 'nu') is the number of degrees of freedom and k is the number of categories (Shennan 1997:107). In all cases in this analysis $k = 2$, therefore, $v = 2 - 1$. The degree of freedom in all cases is 1. The chi-squared distribution, with a level of significance of 0.05 and a degree of freedom of 1, is 3.84146 (found in Table F; Shennan 1997:422-423).

For this study, the test chi-squared test was structured to examine the distribution of artifacts for each side of the living floor. The statistic will test whether or not the distribution of artifacts per side is even or uneven. The assumption being tested is: if the distribution is even then there is no archaeologically visible gendered patterning for that artifact class, whereas if the distribution is uneven then there is archaeologically visible gendered patterning for that artifact class. A null and alternative hypothesis was established for each artifact class in the spatial analysis (Table 5.1). If the result of the chi-squared test is higher than 3.84146 the null hypothesis can be rejected. For example if the null hypothesis is that ceramics are evenly distributed across the stone circle, and the null hypothesis is rejected, then the ceramics have been shown to be unevenly distributed across the stone circle. A table for each statistical test is presented in Appendix D.

Ceramics:	**H0**	Ceramic material is evenly distributed across the stone circle.
	H1	Ceramic material is not evenly distributed across the stone circle.
Faunal:	**H0**	Faunal material is evenly distributed across the stone circle.
	H1	Faunal material is not evenly distributed across the stone circle.
FBR:	**H0**	Fire Broken Rock (FBR) is evenly distributed across the stone circle.
	H1	Fire Broken Rock (FBR) is not evenly distributed across the stone circle.
Lithics:	**H0**	Lithic material is evenly distributed across the stone circle.
	H1	Lithic material is not evenly distributed across the stone circle.

Table 5.1. Chi-squared statistical analysis: null hypothesis (H0) and alternate hypothesis (H1) for each artifact class.

5.6 Spatial Analysis of EbPi-51

The year 2000 assessment of the stone features at EbPi-51 considered ten of the features to be stone circles (Landals and Tischer 2001:8). Of these, three were selected for this analysis based on the architectural structure of the features, the site stratigraphy, and the density of artifacts recovered from the site excavations. The stratigraphy at the site was described as "clear and sharply defined" with "very dark Ah horizons separated by fluvial sands and silts deposited during floods" (Landals and Tischer 2001:9). Stone Circles 4 and 8 were located within an infilled former channel of Mosquito Creek and Stone Circle 2 was just outside of the infilled channel (Landals and Tischer 2001:9). In all three rings the upper stone circle occupation was clearly delineated from a lower occupation by flood deposits (Landals and Tischer 2001:9) and has been assigned a separate CU by the analysts.

The three tipi rings selected for this analysis are considered to probably represent a portion of a single occupation (Landals and Tischer 2001:50). Landals and Tischer (2001:50) determined that the seasonality of the site occupation was most likely in the late winter to early spring, based on the recovery of fetal and neonatal bison faunal material from the excavations. Based on data contained within the catalogue sheets, including late Plains projectile points and metal fragments, this occupation was considered to be a Protocontact Period occupation.

5.6.1 EbPi-51: Stone Circle 2

Prior disturbance directly related to this feature consists of a one by one metre test unit, which was excavated during initial site assessment in 1989 (Head et al. 1990:131). This assessment impacted the central hearth of the ring, recovering "multiple faunal items and a small lithic assemblage" (Landals and Tischer 2001:18, 49). The artifacts recovered from these tests have been added to the data used to compile the distribution maps. There were 38 square metres excavated at this feature during the mitigation phase of the project. The excavators of the stone circle recovered six fetal bones and a partial late flake projectile point.

The doorway of the structure that was once located at Stone Circle 2 has been assessed as having been in the east/southeast. The location of the door has been placed in this position based on the eight doorway location criteria (Appendix B, Table B.1). There appears to be a gap in the cobbles at this position. There is a heavier loading of cobbles on the west side of the feature. The long axis of the feature was potentially along the southeast/northwest axis. The hearth was relatively centrally located. There are no geographic features that would have obstructed an east/southeast doorway. There are no known campsite features that would have obstructed an east/southeast doorway. As a final point of assessment the principle investigator of the site did not feel that there was any explicit evidence for a doorway in this feature and suggested that a southeast assignment for the door was reasonable (Landals, personal communication 2005). Based on the placement of the doorway axis, 22 excavation units were determined to be on the left side of the tipi ring and assigned as women's space and 16 excavation units were determined to be on the right side and assigned as men's space (Appendix C, Figure C.1).

The artifact classes included in the spatial analysis of Stone Circle 2 are faunal, FBR, and lithics. There were 1096 pieces of faunal remains recovered during testing and excavation at this feature. Of those 519 were recovered from the women's side and 577 were recovered from the men's side (Appendix C, Figure C.2). These artifacts appear to be relatively evenly distributed. The null hypothesis was not rejected by the chi-squared analysis (Appendix D, Table D.1). Therefore, the statistical analysis also indicates that faunal material was evenly distributed across the living floor of the tipi. The model states that faunal material should be evenly distributed across the living floor. Therefore, the faunal material at this feature does fit the model established by this study.

There were 19 pieces of FBR recovered during testing and excavation of this feature; 15 were located on the women's side and 4 were located on the men's side (Appendix C, Figure C.3). These numbers indicate that FBR was not evenly distributed across the living floor. The null hypothesis was rejected by the chi-squared analysis (Appendix D, Table D.2), meaning that the FBR was not evenly distributed across the living floor. The model established as part of this study states that FBR should be evenly distributed. Therefore, based on the statistical analysis the FBR does not fit the expectations of the model for this feature. According to the secondary option for the model, if the distribution of FBR is found to be not even, then there should be more FBR on the women's side. This is the case. The implications of this result will be discussed in the next chapter.

There were 57 lithic artifacts recovered during testing and excavation of this feature; 26 were recovered from the women's side and 31 were recovered from the men's side (Appendix C Figure C.4). These numbers indicate that this artifact class was relatively evenly distributed across the living floor. The null hypothesis was not rejected by the chi-squared analysis (Appendix D, Table D.3). Therefore, the statistical analysis also indicates that lithic material was evenly distributed across the living floor of the tipi. The model states that lithic material should be evenly distributed across the living floor. Therefore, the lithic material at this feature does fit the model established by this study.

There were three artifact classes recovered during testing and excavations at this feature. They were faunal, FBR, and lithics. The spatial analysis found that faunal material and lithics were evenly distributed across the living floor, while FBR was not evenly distributed. The basic model states that faunal material, FBR, and lithics will be evenly distributed. FBR was found to be unevenly distributed with more artifacts on the women's side. For EbPi-51 Stone Circle 2, faunal material and lithics fit the expectations of the basic model established in this study, while FBR does not. When the secondary expectations of the model are added to the analysis all three artifact classes fit the expectations of the model for gendered spatial distribution.

5.6.2 EbPi-51: Stone Circle 4

There was minimal prior disturbance directly related to this feature, (Landals and Tischer 2001:29). There were 28 square metres excavated at this feature during the mitigation phase of the project. The feature excavators recovered 17 fetal bones, two neonatal bones, and two period late side-notched projectile points.

The doorway of the structure that was once located at Stone Circle 4 has been assessed as having been in the southeast. The location of the door has been placed in this position based on the eight doorway location criteria used in this analysis (Appendix B, Table B.2). There appears to be a gap in the cobbles at this position. There is a heavier loading of larger cobbles on the northwest side of the feature. The long axis of the feature was potentially along the southeast/northwest axis. The hearth was relatively centrally located. There are no geographic features that would have obstructed a southeast doorway. There are no known campsite features that would have obstructed a southeast doorway. As a final point of assessment the principle investigator of the site did not feel that there was any explicit evidence for a doorway in this feature and suggested that a southeast assignment for the door was reasonable (Landals, personal communication 2005). Based on the placement of the doorway axis, 13 excavation units were determined to be on the left side of the tipi ring and assigned as women's space, 15 excavation units were determined to be on the right side and assigned as men's space (Appendix C, Figure C.5).

The artifact classes included in the spatial analysis of Stone Circle 4 are ceramics, faunal, FBR, and lithics. There were 317 pieces of ceramics recovered during excavation at this feature; 19 were recovered on the women's side and 298 were recovered on the men's side (Appendix C, Figure C.6). This indicates that the ceramic artifacts were not evenly distributed across the living floor. The null hypothesis was rejected by the chi-squared analysis (Appendix D, Table D.4), meaning that the ceramics were not evenly distributed across the living floor. The model established in this study says that ceramics should not be evenly distributed, but that there should be more ceramics on the women's side than the men's side. Therefore, the artifact class of ceramics does not fit the expectations of the model for this feature.

There were 2397 pieces of fauna recovered during excavation at this feature. Of those 497 were recovered from the women's side and 1900 were recovered from the men's side (Appendix C Figure C.7). Clearly faunal remains were not evenly distributed across the living floor. The null hypothesis was rejected by the chi-squared analysis (Appendix D, Table D.5). Therefore, the statistical analysis shows that faunal material was not evenly distributed across the living floor of the tipi. The basic model established in this study says that faunal material should be evenly distributed. Therefore, based on the statistical analysis the faunal material does not fit the expectations of the model for this feature. According to the secondary option for the model, if the distribution of faunal material is found to be not even, then there should be more faunal material on the women's side. This is not the case. The implications of this result will be discussed in the next chapter.

There were 61 pieces of FBR recovered during excavation of this feature; 18 were located on the women's side and 43 were located on the men's side (Appendix C, Figure C.8). These results indicate that FBR was not evenly distributed across the living floor. The statistical analysis agrees with this assumption. The null hypothesis was rejected by the chi-squared analysis, which means that the artifacts were not evenly distributed across the living floor (Appendix D, Table D.6). The model states that FBR should be evenly distributed. Therefore, based on the statistical analysis the FBR does not fit the expectations of the model for this feature. According to the secondary option for the model, if the distribution of FBR is found to be not even, then there should be more FBR on the women's side. This is not the case. The implications of this result will be discussed in the next chapter.

There were 759 lithic artifacts recovered during excavation of this feature; 642 were recovered from the women's side and 117 were recovered from the men's side (Appendix C, Figure C.9). These results indicate that this artifact class was not evenly distributed across the living floor, with a heavier loading of artifacts on the women's side. The null hypothesis was rejected by the chi-squared analysis (Appendix D, Table D.7). Therefore, the statistical analysis shows that lithic material was not evenly distributed across the living floor of the tipi. The model states that lithic material should be evenly distributed across the living floor. Therefore, the lithic material at this feature does not fit the expectations of the model. According to the secondary option for the model, if the distribution of lithic material is found to be not even, then there should be more lithics on the women's side. This is the case. The implications of this result will be discussed in the next chapter.

There were four artifact classes recovered during excavations at this feature that were used in this analysis. They were ceramics, faunal, FBR, and lithics. The spatial analysis demonstrated that all four artifact types were not evenly distributed across the living floor. According to the model established in this study, ceramics should not be evenly distributed while faunal material, FBR and lithics should be evenly distributed. Even though ceramics were not evenly distributed there were more ceramics on the men's side than the women's side. Therefore, ceramics do not fit the expectations of the model at this feature. Faunal, FBR, and lithics were also not evenly distributed at this feature. The distribution of faunal material and FBR was more heavily loaded on the men's side. The distribution of lithics was more heavily loaded on the women's side. For EbPi-51 Stone Circle 4 the artifact classes of ceramics, faunal, FBR, and lithics do not fit the expectation of the basic model established in this study. When the secondary expectations of the model are added to the analysis only lithics can be said to fit the expectations of the model for gendered spatial distribution.

5.6.3 EbPi-51: Stone Circle 8

This stone circle was first located in 2000; therefore, there was no previous exploratory disturbance at the feature (Landals and Tischer 2001:38). There were 47 square metres excavated at this feature during the mitigation phase of the project. The feature excavators recovered one neonatal bison bone.

The doorway of the structure that was once located at Stone Circle 8 has been assessed as having been in the southeast. The location of the door has been placed in this position based on the eight doorway location criteria used in this analysis (Appendix B, Table B.3). There appears to be a gap in the cobbles at this position. There is a heavier loading of larger cobbles on the west side of the feature. The long axis of the feature was potentially along the southeast/northwest axis. The hearth was not centrally located; it was to the rear of the centre point. There are no geographic features that would have obstructed a southeast doorway. There are no known campsite features that would have obstructed a southeast doorway. As a final point of assessment the principle investigator of the site felt that the doorway for this feature was in the southeast. (Landals, personal communication 2005). Based on the placement of the doorway axis, 20 excavation units were determined to be on the left side of the tipi ring and assigned as women's space and 18 excavation units were determined to be on the right side and assigned as men's space (Appendix C, Figure C.10).

The artifact classes included in the spatial analysis of Stone Circle 8 are ceramics, faunal, FBR, and lithics. There were 524 pieces of ceramics recovered during excavation at this feature; 524 were recovered on the women's side and none were recovered on the men's side (Appendix C, Figure C.11). This shows that the ceramic artifacts were not evenly distributed across the living floor. The null hypothesis was rejected by the chi-squared analysis, verifying that the ceramics were not evenly distributed across the living floor (Appendix D, Table D.8). The model established in this study says that ceramics should not be evenly distributed, and more heavily loaded on the women's side. Therefore, the artifact class of ceramics does fit the model for this feature.

There were 1727 pieces of faunal remains recovered during excavation at this feature. Of those 863 were recovered from the women's side and 846 were recovered from the men's side (Appendix C, Figure C.12). This indicates that faunal remains were relatively evenly distributed across the living floor. The null hypothesis was not rejected by the chi-squared analysis (Appendix D, Table D.9). Therefore, the statistical analysis shows that faunal material was evenly distributed across the living floor of the tipi. The model established in this study says that faunal material should be evenly distributed. Therefore, the artifact class of faunal material does fit the model for this feature.

There were 39 pieces of FBR recovered during excavation of this feature; 30 were located on the women's side and 9 were located on the men's side (Appendix C, Figure C.13). These results indicate that FBR was not evenly distributed across the living floor. The statistical analysis agrees with this assumption. The null hypothesis was rejected by the chi-squared analysis, meaning that the artifacts were not evenly distributed across the living floor (Appendix D, Table D.10). The model states that FBR should be evenly distributed. This is not the case. Therefore, based on the statistical analysis the FBR at this feature does not fit the expectations of the basic model. According to the secondary option for the model, if the distribution of FBR is found to be not even, then there should be more FBR on the women's side. This is the case. The implications of this result will be discussed in the next chapter.

There were 1004 lithic artifacts recovered during excavation of this feature; 936 were recovered from the women's side and 68 were recovered from the men's side (Appendix C, Figure C.14). These results indicate that this artifact class was not evenly distributed across the living floor, with a heavier loading of artifacts on the women's side. The null hypothesis was rejected by the chi-squared analysis (Appendix D, Table D.11). Therefore, the statistical analysis shows that lithic material was not evenly distributed across the living floor of the tipi. The model states that lithic material should be evenly distributed across the living floor. Therefore, based on the statistical analysis the lithic material at this feature does not fit the model established by this study. According to the secondary option for the model, if the distribution of lithics is found to be not even, then there should be more lithics on the women's side. This is the case. The implications of this result will be discussed in the next chapter.

There were four artifact classes recovered during testing and excavations at this feature that were used in this analysis. They were ceramics, faunal, FBR, and lithics. The spatial analysis found that ceramics, FBR, and lithics were not evenly distributed across the living floor, while faunal material was evenly distributed. According to the model established in this study, ceramics should not be evenly distributed while faunal, FBR, and lithic material should be evenly distributed. For EbPi-51 Stone Circle 8, the artifact classes of ceramics and faunal material fit the expectations of the model. The artifact classes of FBR and lithics do not fit the expectations of the basic model established in this study. When the secondary expectations of the model are added to the analysis all four artifact classes fit the expectations of the model for gendered spatial distribution.

5.7 Spatial Analysis of EbPi-52

The year 2000 assessment of the stone circle features at EbPi-52 considered eight of the site features to be stone circles (Landals and Tischer 2001:56). Of these, one was selected for this analysis based on the architectural structure of the feature, the site stratigraphy, and the density of artifacts recovered from the site excavations. The stratigraphy at the site was described as consisting of a series of buried Ah horizons (Landals and Tischer 2001:57). However, the stratigraphy at Stone Circle 8 was relatively straight forward and Landals (personal communication 2005) is confident that the excavation most likely represents a discrete occupation.

Landals and Tischer (2001:94) determined that the seasonality of the site occupation was sometime during the winter, based on the recovery of fetal bison from the excavation of other features at the site. The site is considered to be a Protocontact Period occupation, based on the recovery of Late Plains projectile points, metal artifacts, and cut marks on faunal material from metal implements (Landals and Tischer 2001:93).

5.7.1 EbPi-52: Stone Circle 8

Any prior disturbance directly related to this feature was minimal. There was considerable ranching and grazing disturbance at other areas of the site, however, there was comparatively little such disturbance at this feature (Landals and Tischer 2001:86). In total there were 78 square metres excavated at this feature during the mitigation phase of the project, 30 square metres are considered to be interior space and 48 square metres are considered to be exterior space. The excavators of the feature recovered three projectile points, a Late Plains projectile point fragment, a Late Plains Side-Notched projectile point with a blunted tip, and what is described on the catalogue sheet as a late/toy point.

The doorway of the structure that was once located at Stone Circle 8 has been assessed as having been in the south. The location of the door has been placed in this position based on the eight doorway location criteria used in this analysis (Appendix B, Table B.4). While the feature was quite scattered, there appears to be a gap in the cobbles at this position. There may have been a heavier loading of larger cobbles on the north side of the feature. The long axis of the feature was potentially along the south/north axis, however, this is relatively difficult to assess due to the scattered nature of the feature. A definitive hearth was not located during excavation of this feature. There are no geographic features that would have obstructed a south doorway. A door to the east would be obstructed by the slope, however, a door to the south allows for maximum access to daylight entering through the doorway (Landals and Tischer 2001:94). There are no known campsite features that would have obstructed a south doorway. The principle investigator of the site did not feel that there was any explicit evidence for a doorway in this feature (Landals, personal communication 2005).

During excavation a high density of artifacts was noted to the south of the feature and a block was subsequently excavated. A south facing door for this feature is possible and the door has been placed in the south in order to test the location of exterior artifacts against the model. The possibility that restrictions on space usage may extend to the outside of a habitation structure was put forward by M. Wilson and Mckinnon (1989) and M. Wilson (1995) in two related articles. They cite evidence for exterior space segregation by gender for semi-nomadic groups on the Tibetan Plateau. The data from M. Wilson and Mckinnon's (1989) ethnoarchaeological study suggests that such an extension of the ordering of space from the interior to the exterior household space is possible. As with Blackfoot segregation of space by gender the inside of typical Tibetan tents is segregated by gender, with the men's space being to the right of the door and the women's space being to the left of the door (M. Wilson 1995; M. Wilson and Mckinnon 1989). Once the site has been abandoned this spatial segregation can still be identified based on the differential patterning of artifacts.

The data collected through this study also indicate that the spatial segregation which orders the inside of the household continues to the outside areas surrounding the household. When Tibetan women were observed engaging in household activities outside of the tent they were usually restricted to the left side. It was also found that men's activities were more restricted to either the inside space or to areas well away from the camp (M. Wilson 1995; M. Wilson and Mckinnon1989).

The gendered spatial analysis of this feature has been completed in three parts, in order to test both interior and exterior spatial segregation by gender. Based on the placement of the doorway axis, 13 interior space excavation units were determined to be on the left side of the tipi ring and assigned as women's space, 17 interior space excavation units were determined to be on the right side of the tipi ring and assigned as men's space (Appendix C, Figure C.15). Thirty exterior space excavation units were determined to be on the left side of the occupation and assigned as women's space and 18 exterior excavation units were determined to be on the right side and assigned as men's space (Appendix C, Figure C.16). The spatial analysis for this feature was also completed for the combination of the interior and exterior space. The unit assessment for both the interior and exterior spaces were combined; 43 excavation units were assigned as women's space and 35 excavation units were assigned as men's space (Appendix C, Figure C.17).

5.7.1.1 EbPi-52: Stone Circle 8 – Interior Space

The artifact classes included in the spatial analysis of the interior space of Stone Circle 8 are faunal, FBR, and lithics. There were 600 pieces of fauna recovered during the interior excavation at this feature. Of those 340 were recovered from the women's side and 260 were recovered from the men's side (Appendix C, Figure C.18). This distribution appears to be more heavily weighted on the women's side of the living floor. The null hypothesis was rejected by the chi-squared analysis (Appendix D, Table D.12). Therefore, the statistical analysis shows that faunal material was not evenly distributed across the living floor of the tipi. The model established in this study says that faunal material should be evenly distributed. Therefore, based on the statistical analysis the faunal material does not fit the expectations of the basic model. According to the secondary option for the model, if the distribution of faunal material is found to be not even, then there should be more faunal material on the women's side. This is the case. The implications of this result will be discussed in the next chapter.

There were 219 pieces of FBR recovered during the interior excavation of this feature; 104 were located on the women's side and 115 were located on the men's side (Appendix C, Figure C.19). This distribution indicates that FBR was evenly distributed across the living floor. The statistical analysis agrees with this assumption. The null hypothesis was not rejected, meaning that the artifacts were evenly distributed across the living floor (Appendix D, Table D.13). The model states that FBR should be evenly distributed. Therefore, this artifact class at this feature does fit the model.

There were 48 lithic artifacts recovered during the interior excavation of this feature; 17 were recovered from the women's side and 31 were recovered from the men's side (Appendix C, Figure C.20). These results indicate that this artifact class was not evenly distributed across the living floor, with a heavier loading of artifacts on the men's side. The null hypothesis was rejected by the chi-squared analysis (Appendix D, Table D.14). Therefore, the statistical analysis shows that lithic material was not evenly distributed across the living floor of the tipi. The model predicts that lithic material should be evenly distributed across the living floor. Therefore, the lithic material at this feature does not fit the expectations of the basic model established by this study. According to the secondary option for the model, if the distribution of lithics is found to be not even, then there should be more lithics on the women's side. This is not the case. The implications of this result will be discussed in the next chapter.

There were three artifact classes recovered during the interior excavations at this feature that were used in this analysis. They were faunal, FBR, and lithics. The spatial analysis found that faunal material and lithics were not evenly distributed across the living floor, while FBR was evenly distributed. The model states that the distribution for faunal material, FBR, and lithics should be evenly distributed. For the interior space of this feature, FBR fits the expectations of the basic model. While faunal material and lithics did not fit the expectations of the basic model, there were more faunal remains recovered on the women's side than the men's and more lithics recovered on the men's side than the women's. For the interior space at EbPi-52 Stone Circle 8, the artifact classes of ceramics and FBR do fit the expectations of the basic model, while faunal material and lithics do not fit the expectations of the basic model established in this study. When the secondary expectations of the model are added to the analysis faunal material can be said to fit the expectations of the model for gendered spatial distribution, but lithics can not.

5.7.1.2 EbPi-52: Stone Circle 8 – Exterior Space

The artifact classes included in the spatial analysis of the exterior space of Stone Circle 8 are ceramics, faunal, FBR, and lithics. There were 756 pieces of ceramics recovered during the exterior excavation of this feature; 734 were recovered on the women's side and 22 were recovered on the men's side (Appendix C, Figure C.21). This indicates that the ceramic artifacts were not evenly distributed. The null hypothesis was rejected by the chi-squared analysis, meaning that the ceramics were not evenly distributed (Appendix D, Table D.15). The model established in this study says that ceramics should not be evenly distributed, and more heavily loaded on the women's side. This is the case. Therefore, the artifact class of ceramics does fit the expectations of the model.

There were 1530 pieces of fauna recovered during the exterior excavation at this feature. Of those 869 were recovered from the women's side and 661 were recovered from the men's side (Appendix C, Figure C.22). This distribution appears to be more heavily weighted on the women's side of the living floor. The null hypothesis was rejected by the chi-squared analysis (Appendix D, Table D.16). Therefore, the statistical analysis shows that faunal material was not evenly distributed. The model established in this study says that faunal material should be evenly distributed. This is not the case. Therefore, based on the statistical analysis the artifact class of faunal material does not fit the basic model for this feature. According to the secondary option for the model, if the distribution of faunal material is found to be not even, then there should be more faunal material on the women's side. This is the case. The implications of this result will be discussed in the next chapter.

There were 380 pieces of FBR recovered during excavation of the exterior of this feature; 181 were located on the women's side and 199 were located on the men's side (Appendix C, Figure C.23). This distribution indicates that FBR was relatively evenly distributed. The statistical analysis agrees with this assumption. The null hypothesis was not rejected, meaning that the artifacts were evenly distributed across the living floor (Appendix D, Table D.17). The model states that FBR should be evenly distributed. Therefore, FBR does fit the model.

There were 75 lithic artifacts recovered during the exterior excavation of this feature; 59 were recovered from the women's side and 16 were recovered from the men's side (Appendix C, Figure C.24). These results indicate that this artifact class was not evenly distributed, with a heavier loading of artifacts on the women's side. The null hypothesis was rejected by the chi-squared analysis (Appendix D, Table D.18). Therefore, the statistical analysis shows that lithic material was not evenly distributed. The model states that lithic material should be evenly distributed. Therefore, based on the statistical analysis the lithic material at this feature does not fit the basic model established by this study. According to the secondary option for the model, if the distribution of lithics is found to be not even, then there should be more lithics on the women's side. This is the case. The implications of this result will be discussed in the next chapter.

There were four artifact classes recovered during the exterior excavations at this feature that were used in this analysis. They were ceramics, faunal, FBR, and lithics. The spatial analysis found that ceramics, faunal, and lithics were not evenly distributed across the living floor, while FBR was evenly distributed. The model established for this study states that ceramics should not be evenly distributed, with more artifacts on the women's side. The model further states that faunal, FBR, and lithics should be evenly distributed. For the exterior space at EbPi-52 Stone Circle 8, the artifact classes of ceramics and FBR do fit the expectations of the basic model, while faunal material and lithics do not fit the expectations of the basic model established in this study. When the secondary expectations of the model are added to the analysis all four artifact classes fit the expectations of the model for gendered spatial distribution.

5.7.1.3 EbPi-52: Stone Circle 8 – Interior and Exterior Space Combined

The artifact classes included in the spatial analysis of the combined interior and exterior space of Stone Circle 8 are ceramics, faunal, FBR, and lithics. There were 760 pieces of ceramics recovered during the excavation of this feature, 738 were recovered on the women's side and 22 were recovered on the men's side (Appendix C, Figure C.25). This indicates that the ceramic artifacts were not evenly distributed across the occupation floor. The null hypothesis was rejected by the chi-squared analysis (Appendix D, Table D.19), meaning that the ceramics were not evenly distributed across the living floor. The model established in this study says that ceramics should not be evenly distributed, and more heavily loaded on the women's side. This is the case.

Therefore, the artifact class of ceramics does fit the expectations of the model for this feature.

There were 2130 pieces of fauna recovered during excavation at this feature. Of those 1209 were recovered from the women's side and 921 were recovered from the men's side (Appendix C, Figure C.26). This distribution appears to be more heavily weighted on the women's side of the living floor. The null hypothesis was rejected by the chi-squared analysis (Appendix D, Table D.20). Therefore, the statistical analysis shows that faunal material was not evenly distributed across the occupation floor. The model established in this study says that faunal material should be evenly distributed. Therefore, based on the statistical analysis the faunal material does not fit the expectations of the basic model for this feature. According to the secondary option for the model, if the distribution of faunal material is found to be not even, then there should be more faunal material on the women's side. This is the case. The implications of this result will be discussed in the next chapter.

There were 599 pieces of FBR recovered during excavation of this feature; 285 were located on the women's side and 314 were located on the men's side (Appendix C, Figure C.27). This distribution appears to relatively even. The null hypothesis was not rejected by the chi-squared analysis (Appendix D, Table D.21). The model predicts that FBR should be evenly distributed. Therefore, this artifact class at this feature does fit the model.

There were 123 lithic artifacts recovered during excavation of this feature; 76 were recovered from the women's side and 47 were recovered from the men's side (Appendix C, Figure C.28). These results indicate that this artifact class was not evenly distributed across the living floor, with a heavier loading of artifacts on the women's side. The null hypothesis was rejected by the chi-squared analysis (Appendix D, Table D.22). Therefore, the statistical analysis shows that lithic material was not evenly distributed across the living floor of the tipi. The model states that lithic material should be evenly distributed. Therefore, the lithic material at this feature does not fit the expectations of the basic model established in this study. According to the secondary option for the model, if the distribution of lithics is found to be not even, then there should be more lithics on the women's side. This is the case. The implications of this result will be discussed in the next chapter.

There were four artifact classes recovered during excavations at this feature that were used in this analysis. They were ceramics, faunal, FBR, and lithics. The spatial analysis found that ceramics, faunal, and lithics were not evenly distributed across the living floor, with more artifacts for each class on the women's side of the living floor. These results fit with the expectations of the basic model for ceramics but not for faunal material and lithics. The artifact class of FBR was evenly distributed which does fit the expectations of the model. For the combination of the interior and exterior space at EbPi-52 Stone Circle 8, the artifact classes of ceramics and FBR fit the expectations of the basic model, while faunal material and lithics do not fit the expectations of the basic model established in this study. When the secondary expectations of the model are added to the analysis all four artifact classes fit the expectations of the model for gendered spatial distribution.

5.8 Spatial Analysis of EbPi-53

The year 2000 assessment of the stone circle features at EbPi-53 considered six of the site features to be stone circles (Landals and Tischer 2001:100). Of these, two were selected for this analysis based on the architectural structure of the features, the site stratigraphy, and the density of artifacts recovered from the site excavations. The stratigraphy at the site was described as 'relatively simple', consisting of a thin Ah horizon that was approximately 10 cm thick (Landals and Tischer 2001:101). Unlike the other sites in this analysis, no fetal bone was recovered at this site (Landals and Tischer 2001:120-121). There appears to be an absence of central hearths within the stone circles, which may indicate a warm season occupation (Landals and Tischer 2001:104, 107, 117, 119-120). Another factor that makes the features at this site different from the other sites in the sample is that the stone circles are less dense and smaller than at the other sites (Landals and Tischer 2001:119). Together this information indicates that this site may represent a different season of occupation than the other sites used in the analysis.

There were no diagnostic artifacts recovered at the site. Historic artifacts that were recovered during excavation and through the use of a metal detector are considered to be associated with the stone circle occupation (Landals and Tischer 2001:120). A faunal sample from Stone Circle 1 was submitted for radiocarbon dating. The date returned was 100 ± 30 radiocarbon years BP (Beta 156441). Calibrated at two sigma this places the occupation between 1800 and 1950 A. D. Such a date could place the occupation of the site to the Contact Period. The principle investigator feels that the occupation of the site may have been anywhere from the Protocontact into the Contact Period (Landals, personal communication 2005).

5.8.1 EbPi-53: Stone Circle 1

There was minimal prior disturbance at this feature. There were 32 square metres excavated at this feature during the mitigation phase of the project. The excavations at this feature did not recover any seasonally indicative faunal material or diagnostic artifacts.

The doorway of the structure that was once located at Stone Circle 1 has been assessed as having been in the southwest. The location of the door has been placed in this position based on the eight doorway location criteria used in this analysis (Appendix B, Table B.5). There appears to be a gap in the cobbles at this position. There is not a discernible heavier loading of larger cobbles at any point of the feature. The long axis of the feature was potentially along the southwest/northeast axis. The north/south axis is also relatively long. However, this may be due the relatively light cobble loading on this axis. No clearly defined hearth feature was located. There are no geographic features that would have obstructed a southwest doorway. However, a doorway to the east or southeast would have been obstructed by the valley wall. In addition, a door placed to the south or southwest would place the opening towards the creek (Landals and Tischer 2001:109). There are no known campsite features that would have obstructed a southwest doorway. As a final point of assessment the principle investigator of the site felt that the most probable location for the doorway at this feature was to the south or southwest. (Landals, personal communication 2005). Based on the placement of the doorway axis, 17 excavation units were determined to be on the left side of the tipi ring and assigned as women's space, 15 excavation units were determined to be on the right side and assigned as men's space (Appendix C, Figure C.29).

The artifact classes included in the spatial analysis of Stone Circle 1 are faunal, FBR, and lithics. There were 283 pieces of fauna recovered during excavation at this feature. Of those 157 were recovered from the women's side and 126 were recovered from the men's side (Appendix C, Figure C.30). This distribution appears relatively even. The null hypothesis was not rejected by the chi-squared analysis (Appendix D, Table D.23). Therefore, the statistical analysis shows that faunal material was evenly distributed across the living floor of the tipi. The model established in this study says that faunal material should be evenly distributed. Therefore, the artifact class of faunal material does fit the expectations of the model for this feature.

There were 24 pieces of FBR recovered during excavation of this feature; five were located on the women's side and 19 were located on the men's side (Appendix C, Figure C.31). These results indicate that FBR was not evenly distributed across the living floor. The statistical analysis agrees with this assumption. The null hypothesis was rejected by the chi-squared analysis which means that the artifacts were not evenly distributed across the living floor (Appendix D, Table D24). The model predicts that FBR should be evenly distributed. Therefore, this artifact class at this feature does not fit the expectations of the basic model. According to the secondary option for the model, if the distribution of faunal material is found to be not even, then there should be more faunal material on the women's side. This is not the case. The implications of this result will be discussed in the next chapter.

There were 97 lithic artifacts recovered during excavation of this feature, 37 were recovered from the women's side and 60 were recovered from the men's side (Appendix C, Figure C.32). These results indicate that this artifact class was not evenly distributed across the living floor, with a heavier loading of artifacts on the men's side. The null hypothesis was rejected by the chi-squared analysis (Appendix D, Table D.25). Therefore, the statistical analysis shows that lithic material was not evenly distributed across the living floor of the tipi. The model states that lithic material should be evenly distributed across the living floor. Therefore, based on the statistical analysis the lithic material at this feature does not fit the expectations of the basic model for gendered spatial distribution established by this study. According to the secondary option for the model, if the distribution of lithics is found to be not even, then there should be more lithics on the women's side. This is not the case. The implications of this result will be discussed in the next chapter.

There were three artifact classes recovered during testing and excavations at this feature that were used in this analysis. They were faunal material, FBR, and lithics. The spatial analysis found that FBR and lithics were not evenly distributed across the living floor but that faunal material was evenly distributed. The uneven distribution of FBR and lithics does not fit the expectations of the basic model. An even distribution of faunal material does fit with the expectations of the model. For EbPi-53 Stone Circle 1, the artifact class of faunal material does fit the expectations of the basic model, while FBR and lithics do not fit the expectations of the basic model established in this study. When the secondary expectations of the model are added to the analysis FBR and lithics still do not fit the expectations of the model for gendered spatial distribution.

5.8.2 EbPi-53: Stone Circle 6

There was minimal prior disturbance at this feature. There were 23 square metres excavated at this feature during the mitigation phase of the project. The excavations at this feature did not recover any seasonally indicative faunal material or diagnostic artifacts.

The cobbles that make up this stone feature are scattered. However, based on the doorway selection criteria set out for this study the best possible location for the doorway to the structure has been established. The doorway of the structure that was once located at Stone Circle 6 has been assessed as having been in the west. The location of the door has been placed in this position based on the eight doorway location criteria used in this analysis (Appendix B, Table B.6). There is no obvious gap in the cobbles of this feature at any specific position. There appears to be a heavier loading of cobbles on the west side of the feature. The long axis of the feature is difficult to assess because the feature is extremely scattered. There was no clearly defined hearth feature located. There are no geographic features that would have obstructed a west doorway, the feature is located very close to the slope and a door in the east or southeast would not have been practical. There are no known campsite features that would have obstructed a west-facing doorway and the creek is located directly to the west of the stone circle. As a final point of assessment the principle investigator of the site felt that the doorway for this feature could have been in either the south or the west. (Landals, personal communication 2005). Based on the placement of the doorway axis, 11 excavation units were determined to be on the left side of the tipi ring and assigned as women's space and 12 excavation units were determined to be on the right side and assigned as men's space (Appendix C, Figure C.33).

The artifact classes included in the spatial analysis of Stone Circle 6 are faunal and lithics. There were 55 faunal artifacts recovered during excavation at this feature, 30 were recovered on the women's side and 25 were recovered on the men's side (Appendix C, Figure C.34). This indicates that the faunal artifacts were relatively evenly distributed across the living floor. The null hypothesis was not rejected by the chi-squared analysis (Appendix D, Table D.26), meaning that the faunal material was evenly distributed across the living floor. The model established in this study says that faunal artifacts should be evenly distributed. Therefore, the artifact class of faunal material does fit the expectations of model for this feature.

There were 18 lithic artifacts recovered during excavation of this feature; 12 were recovered from the women's side and six were recovered from the men's side (Appendix C, Figure C.35). This indicates that lithics were not evenly distributed across the living floor, with a heavier loading of artifacts on the women's side. However, the null hypothesis was not rejected by the chi-squared analysis (Appendix D, Table D.27). Therefore, the statistical analysis indicates that lithic material was evenly distributed across the living floor of the tipi. The model states that lithic material should be evenly distributed across the living floor. Therefore, the lithic material at this feature does fit the expectations of the model established by this study.

There were two artifact classes recovered during excavations at this feature that were used in this analysis. They were faunal and lithics. For faunal material and lithics the model also states that there should be an even distribution. Therefore, faunal material and lithics at this feature do fit the expectations of the model. For EbPi-53 Stone Circle 6, faunal material and lithics do fit the expectations of the model.

5.9 Spatial Analysis of EbPi-61

The year 2000 assessment of the stone circle features at EbPi-61 considered four of the site features to be stone circles (Landals and Tischer 2001:136). Of these, one (Stone Circle 1) was selected for this analysis based on the architectural structure of the features, the site stratigraphy, and the density of artifacts recovered from the site excavations. The stratigraphy at the site was described as extremely complex with mainly poorly distinguished aeolian soils (Landals and Tischer 2001:138). There were two main CUs identified at the feature; CU1 located in the upper level was selected for analysis. This CU is associated with the stone circle and the soil profile is fairly consistent throughout the excavation block (Landals and Tischer 2001:139). As described in the interim report, "Two darker, organic rich bands in the upper Ah, one at approximately 6 to 12 cm (ring floor) and one at approximately 17 to 20 cm mark two major cultural units" (Landals and Tischer 2001:139-143). The unit of analysis selected here comes from the upper level and although it is recognized that, “in general these cultural units probably represent multiple occupations of the site during a period of relatively slow soil deposition”, the analysis will consider CU1 to be one occupation (Landals and Tischer 2001:143).

The seasonality for CU1 cannot be determined based on recovered faunal remains. The high density of ring rocks points to a cold season occupation in which tipis were often well-weighted against the elements. However, evidence for an internal hearth was described as faint and amorphous, having “no internal structure suggesting preparation, nor any sign of long term use” (Landals and Tischer 2001:149). Such hearths are inferred to indicate warm season occupation.

Two late Plains side-notched projectile points were recovered from CU1 in Stone Circle 1. No radiocarbon dates were obtained for the stone circle. The fact that no historic artifacts were recovered during excavation, combined with the recovery of ‘late’ projectile points, may place the occupation anywhere from the Late Precontact period to the early Protocontact period.

5.9.1 EbPi-61: Stone Circle 1

Prior disturbance directly related to this feature consists of a one by one metre test unit excavated during initial site assessment in 1989 (Landals and Tischer 2001:148). The material recovered from this test has been added to the data used to compile the distribution maps (Head et al. 1990:137). There were 24 square metres excavated at this feature during the mitigation phase of the project. During feature excavation, two late period projectile points were recovered in association with CU1.

The doorway of the structure that was once located at Stone Circle 1 has been assessed as having been in the southeast. The location of the door has been placed in this position based on the eight doorway location criteria used in this analysis (Appendix B, Table B.7). There is a gap in the cobbles at this position. There is not a heavier loading of larger cobbles on the northwest side of the feature, with a second smaller gap in the northwest. The long axis of the feature was potentially along the southeast/northwest axis. The hearth was located just to the front of centre on the front to back axis of the tipi ring. There are no geographic features that would have obstructed a southeast doorway. There are no known campsite features that would have obstructed a southeast doorway. As a final point of assessment the principle investigator of the site felt that the doorway for this feature was in the southeast. (Landals, personal communication 2005). Based on the placement of the doorway axis, 13 excavation units were determined to be on the left side of the tipi ring and assigned as women's space and 11 excavation units were determined to be on the right side and assigned as men's space (Appendix C, Figure C.36).

The artifact classes included in the spatial analysis of Stone Circle 1 are ceramics, faunal, FBR, and lithics. There were 11 pieces of ceramics recovered during testing and excavation at this feature; all were located on the women's side of the living floor (Appendix C, Figure C.37). This indicates that the ceramic artifacts were not evenly distributed across the living floor. The null hypothesis was rejected by chi-squared analysis (Appendix D, Table D.28), meaning that the ceramics were not evenly distributed across the living floor. The model established in this study predicts that ceramics should not be evenly distributed, and that there should be more ceramics on the women's side than the men's side. Therefore, the artifact class of ceramics does fit the expectations of the model for this feature.

There were 196 pieces of fauna recovered during excavation at this feature. Of those, 94 were recovered from the women's side and 102 were recovered from the men's side (Appendix C, Figure C.38). This distribution appears relatively even. The null hypothesis was not rejected by the chi-squared analysis (Appendix D, Table D.29). The statistical analysis shows that faunal material was evenly distributed across the living floor of the tipi. The model established in this study says that faunal material should be evenly distributed. Therefore, the artifact class of faunal material does fit the expectations of the model for this feature.

There were 585 pieces of FBR recovered during excavation of this feature, 305 were located on the women's side and 280 were located on the men's side (Appendix C, Figure C.39). These results indicate that FBR was relatively evenly distributed across the living floor. The statistical analysis agrees with this assumption. The null hypothesis was not rejected which means that the artifacts were evenly distributed across the living floor (Appendix D, Table D.30). The model states that FBR should be evenly distributed. Therefore, this artifact class at this feature does fit the model.

There were 102 lithic artifacts recovered during excavation of this feature; 57 were recovered from the women's side and 45 were recovered from the men's side (Appendix C, Figure C.40). These results indicate that this artifact class was relatively evenly distributed across the living floor. The null hypothesis was not rejected by the chi-squared analysis (Appendix D, Table D.31). Therefore, the statistical analysis shows that lithic material was evenly distributed across the living floor of the tipi. The model states that lithic material should be evenly distributed across the living floor. Therefore, the lithic material at this feature does fit the expectations of the model established by this study.

There were four artifact classes recovered during testing and excavations at this feature that were used in this analysis. They were ceramics, faunal, FBR, and lithics. The ceramics were not evenly distributed across the living floor, with a heavier weighting on the women's side. This result was expected by the model established for this study. Faunal, FBR and lithics were found to be evenly distributed. This result was expected. For EbPi-61 Stone Circle 1, the artifact classes of ceramics, faunal, FBR, and lithics do fit the expectations of the model of gendered spatial distribution established in this study.

5.10 Spatial Analysis of EbPi-75

The year 2000 assessment of the stone circle features at EbPi-75 considered twelve of the site features to be stone circles (Landals and Tischer 2001:207). Of these, three were selected for this analysis based on the architectural structure of the features, the site stratigraphy, and the density of artifacts recovered from the site excavations. The stratigraphy at the site was described as 'complex and varied greatly across the site' (Landals and Tischer

2001:211). Although complex the stratigraphy was "wonderful at the microscopic scale" (Landals, personal communication 2005). The three stone circles selected for this analysis were considered to be part of the same occupation (Landals and Tischer 2001:245) with ring-associated deposits contained in the first 5 to 6 cm below surface (Landals and Tischer 2001:228, 245). The catalogued data for the features were not separated into two occupations. In an attempt to analyze only the upper occupation any material recovered below 6 cm was removed from the sample. This included artifacts recovered from the screen but noted as from 6 cm or lower below the surface, unless the catalogue comments noted association with the upper occupation. This strategy may have removed some associated artifacts from the sample. However, the strategy has ensured that there will not be any lower occupation artifacts included in the analysis.

A dental cementum analysis has been completed for two of the bison mandibles recovered from the excavation. One of these mandibles was most likely associated with the upper occupation. The season of death for this animal has been estimated at somewhere between the end of March to mid-June, indicating a spring season kill (Landals, personal communication 2005). This would indicate a spring occupation of the site. Based on the nature of recovered artifacts the occupation under examination in this analysis has been assigned to the late Protocontact period to early Contact period (Landals and Tischer 2001:275).

5.10.1 EbPi-75: Stone Circle 4

There was minimal prior disturbance at this feature. There were 63 square metres excavated at this feature during the mitigation phase of the project. The excavations at this feature did not recover any seasonally indicative faunal material or diagnostic lithic artifacts.

The doorway of the structure that was once located at Stone Circle 4 has been assessed as having been in the southeast. The structure of this feature indicates at least three potential doorway locations. The location of the door has been placed in the southeast position based on this location being the 'best fit' with the eight doorway location criteria used in this analysis (Appendix B, Table B.8). There appears to be a gap in the cobbles at this position. There is not a heavier loading of larger cobbles on the west side of the feature. The long axis of the feature was probably on the northeast/southwest axis. The hearth was relatively centrally located. There are no geographic features that would have obstructed a southeast doorway. There are no known campsite features that would have obstructed a southeast doorway. As a final point of assessment the principle investigator of the site felt that the doorway for this feature was in the southeast. (Landals, personal communication 2005). Based on the placement of the doorway axis, 34 excavation units were determined to be on the left side of the tipi ring and assigned as women's space and 29 excavation units were determined to be on the right side and assigned as men's space (Appendix C, Figure C.41).

The artifact classes included in the spatial analysis of Stone Circle 4 are ceramics and faunal. There were 117 pieces of ceramics recovered during excavation at this feature. Of those, 21 were recovered from the women's side and 96 were recovered from the men's side (Appendix C, Figure C.42). This distribution shows that ceramic artifacts were not evenly distributed across the living floor. The null hypothesis was rejected by the chi-squared analysis (Appendix D, Table D.32), meaning that the ceramics were not evenly distributed across the living floor. The model established in this study says that ceramics should not be evenly distributed, and that there should be more ceramics on the women's side than the men's side. This is not the case. Therefore, the artifact class of ceramics does not fit the expectations of the model for this feature.

There were 1028 pieces of fauna recovered during the excavation at this feature. Of those, 137 were recovered from the women's side and 891 were recovered from the men's side (Appendix C, Figure C.43). Clearly faunal remains were not evenly distributed across the living floor. The null hypothesis was rejected by the chi-squared analysis (Appendix D, Table D.33). Therefore, the statistical analysis shows that faunal material was not evenly distributed across the living floor of the tipi. The basic model established in this study states that faunal material should be evenly distributed. This is not the case. Therefore, the artifact class of faunal material does not fit the basic model for this feature. According to the secondary option for the model, if the distribution of faunal material is found to be not even, then there should be more faunal material on the women's side. This is not the case. The implications of this result will be discussed in the next chapter.

There were two artifact classes recovered during testing and excavations at this feature that were used in this analysis. They were ceramics and faunal. For EbPi-75 Stone Circle 4, these artifact classes do not fit the expectations of the basic model established in this study. When the secondary expectations of the model are added to the analysis the faunal material still does not fit the expectations of the model.

5.10.2 EbPi-75: Stone Circle 5

There was minimal prior disturbance at this feature. There were 56 square metres excavated at this feature during the mitigation phase of the project. The excavations at this feature did not recover any seasonally indicative faunal material or diagnostic lithic artifacts.

The doorway of the structure that was once located at Stone Circle 5 has been assessed as having been in the southeast. The location of the door has been placed in this position based on the eight doorway location criteria used in this analysis (Appendix B, Table B.9). There appears to be a gap in the cobbles at this position. There is a heavier loading of larger cobbles on the west side of the feature. The long axis of the feature was potentially along the southeast/northwest axis; however, the feature is only slightly ovate. There are two possible hearths associated with this occupation, one small one located centrally and slightly to the rear of the door and another larger one located just inside the door. There are no geographic features that would have obstructed a southeast doorway. There are no known campsite features that would have obstructed a southeast doorway. As a final point of assessment the principle investigator of the site felt that the doorway for this feature was in the southeast. (Landals, personal communication 2005). Based on the placement of the doorway axis, 31 excavation units were determined to be on the left side of the tipi ring and assigned as women's space, 25 excavation units were determined to be on the right side and assigned as men's space (Appendix C, Figure C.44).

The artifact classes included in the spatial analysis of Stone Circle 5 are faunal and FBR. There were 320 pieces of fauna recovered during excavation at this feature. Of those 131 were recovered from the women's side and 181 were recovered from the men's side (Appendix C, Figure C.45). This distribution appears relatively even, with a slight loading on the men's side of the living floor. The null hypothesis was rejected by the chi-squared analysis (Appendix D, Table D.34). Therefore, the statistical analysis shows that faunal material was not evenly distributed across the living floor of the tipi. The model established in this study says that faunal material should be evenly distributed. Therefore, the artifact class of faunal material does not fit the expectations of the model for this feature. According to the secondary option for the model, if the distribution of faunal material is found to be not even, then there should be more faunal material on the women's side. This is not the case. The implications of this result will be discussed in the next chapter.

There were 13 pieces of FBR recovered during excavation of this feature; seven were located on the women's side and six were located on the men's side (Appendix C, Figure C.46). These results indicate that FBR was evenly distributed across the living floor. The statistical analysis agrees with this assumption. The null hypothesis was not rejected which means that the artifacts were evenly distributed across the living floor (Appendix D, Table D.35). The model states that FBR should be evenly distributed. The FBR at this feature does fit the expectations of the model.

There were two artifact classes recovered during excavations at this feature that were used in this analysis. They were faunal and FBR. The spatial analysis found that faunal material was not evenly distributed and did not fit the expectations of the basic model. FBR was found to be evenly distributed; a result that complies with the expectations of the basic model. For EbPi-75 Stone Circle 5, the artifact class of FBR does fit the expectations of the basic model but faunal material does not fit the expectations of the basic model established in this study. When the secondary expectations of the model are added to the analysis faunal material still does not fit the expectations of the model for gendered spatial distribution.

5.10.3 EbPi-75: Stone Circle 9

There was minimal prior disturbance at this feature. There were 68 square metres excavated at this feature during the mitigation phase of the project. The excavations at this feature did not recover any seasonally indicative faunal material or diagnostic artifacts.

The doorway of the structure that was once located at Stone Circle 9 has been assessed as having been in the northeast. The location of the door has been placed in this position based on the eight doorway location criteria used in this analysis (Appendix B, Table B.10). There appears to be a gap in the cobbles at this position. There is a heavier loading of larger cobbles on the southwest side of the feature. The long axis of the feature was potentially not along this axis but instead along the southeast/northwest axis. The hearth was relatively centrally located. There are no geographic features that would have obstructed a northeast doorway. There are no known campsite features that would have obstructed a northeast doorway, and the creek is located to the northeast of the feature. As a final point of assessment the principle investigator of the site felt that the doorway for this feature was in the northeast. (Landals, personal communication 2005). Based on the placement of the doorway axis, 31 excavation units were determined to be on the left side of the tipi ring and assigned as women's space and 37 excavation units were determined to be on the right side and assigned as men's space (Appendix C, Figure C.47).

The artifact class included in the spatial analysis of Stone Circle 9 is faunal. There were 338 pieces of faunal remains recovered during excavation at this feature. Of those, 233 were recovered from the women's side and 105 were recovered from the men's side (Appendix C, Figure C.48). The distribution appears to be uneven, with more artifacts on the women's side of the living floor. The null hypothesis was rejected by the chi-squared analysis (Appendix D, Table D.36). Therefore, the statistical analysis also shows that faunal material was not evenly distributed across the living floor of the tipi. The model established in this study says that faunal material should be evenly distributed. This is not the case. Therefore, based on the statistical analysis the artifact class of faunal material does not fit the expectations of the basic model for this feature. According to the secondary option for the model, if the distribution of faunal material is found to be not even, then there should be more faunal material on the women's side. This is the case. The implications of this result will be discussed in the next chapter.

There was one artifact class recovered during excavations at this feature that was used in this analysis, faunal. The spatial analysis found that faunal material was not evenly distributed with more artifacts recovered from the women's side. For EbPi-75 Stone Circle 9 the artifact class of faunal material does not fit the expectations of the basic model established in this study. However, when the secondary expectations of the model are added to the analysis the faunal material does fit the expectations of the model for gendered spatial distribution.

5.11 Summary

This chapter has progressed through the gendered spatial analysis of the ten stone circles used in this analysis. The study area was described, along with the specific location of each site and the features within each site. The excavation and analysis history of the sites was presented. The model, as established in this study, for the gendered spatial distribution of household space was then set out. This model builds on the information presented in previous chapters and is the basis for completing the spatial analysis in this chapter. The validity of the model will be assessed in the following chapter. The rest of this chapter describes each site and each feature used in the analysis. Where known specific details such as season of occupation and time period of occupation were included in the site and feature description sections. The assessment of the best possible placement of the doorway to the tipis that once stood at each feature was detailed. Based on the placement of the doorway axis, each feature was divided into women's and men's sides. The results for the gendered spatial analysis were then presented for each feature. A discussion of these results is contained in the following chapter.

CHAPTER SIX

DISCUSSION OF RESULTS

6.1 Introduction

In this chapter the results of the spatial analysis which were presented in the previous chapter are synthesized, discussed and interpreted. An examination of the results of the analysis of gendered spatial distribution will be presented by site and stone circle. The results of the analysis will then be examined by artifact class. The interpretation of the results has been organized this way in order to highlight which of the features in the study complied with the model and which did not. The examination by artifact class will include recommendations as to which artifact class or classes may be the best to use for the examination of gender processes within tipi rings. Also, because one of the tipi rings in the study (EbPi-52 Stone Circle 8) had an excavation block that extends outside of the door of the tipi some inferences will be made as to the relevance of examining the exterior spaces immediately outside of the tipi ring.

6.2 Results and Interpretation of the Spatial Analysis by Site

6.2.1 EbPi-51: Stone Circle 2, Stone Circle 4, and Stone Circle 8

The spatial analysis of Stone Circle 2 was conducted for the artifact classes of faunal, FBR, and lithics. This analysis found that at this feature FBR was not evenly distributed across the living floor, while faunal material and lithics were evenly distributed across the living floor. These results were expected for faunal material and lithics but not for FBR. Since two of the three artifact classes fit the expectations of the basic model of gendered space established for this study, the feature can be said to fit with the expectations of the basic model (Table 6.1).

For faunal material, FBR, and lithics there was a secondary expectation for the model of gendered spatial distribution established for this study. The secondary expectation stated that if the distribution of artifacts was found to be uneven then there should be more artifacts on the women's side than the men's. At this feature the artifact class FBR does fit with this expectation as there were more artifacts recovered from the women's side of the living floor. Therefore, FBR does fit with the secondary expectations of the model of gendered spatial distribution established for this study (Table 6.2). The feature can still be said to fit with the expectations of the model for gendered spatial distribution.

The spatial analysis of Stone Circle 4 was conducted for the artifact classes of ceramics, faunal, FBR, and lithics. The analysis found that at this feature ceramics were evenly distributed across the living floor, while faunal material, FBR, and lithics were not evenly distributed across the living floor. These results were not expected for any of the artifact classes. Since all of the artifact classes do not fit the statistical criteria established for the spatial analysis this feature does not fit the expectations of the basic model of gendered spatial distribution established for this study (Table 6.1).

		Artifact Classes that Fit the Expectations of the Basic Model	Artifact Classes that Do Not Fit the Expectations of the Basic Model	Stone Circle Fits the Expectations of the Basic Model
EbPi-51	**SC2**	Faunal, Lithics	FBR	Yes
	SC4		Ceramics, Faunal, FBR, Lithics	No
	SC8	Ceramics, Faunal	FBR, Lithics	Split
EbPi-52	**SC8 (Interior Space)**	FBR	Faunal, Lithics	No
	SC8 (Exterior Space)	Ceramics, FBR	Faunal, Lithics	Split
	SC8 (Interior and Exterior Space)	Ceramics, FBR	Faunal, Lithics	Split
EbPi-53	**SC1**	Faunal	FBR, Lithics	No
	SC6	Faunal, Lithics		Yes
EbPi-61	**SC1**	Ceramics, Faunal, FBR, Lithics		Yes
EbPi-75	**SC4**		Ceramics, Faunal	No
	SC5	FBR	Faunal	Split
	SC9		Faunal	No

Table 6.1. Results of the spatial analysis by stone circle for the basic expectations of the model of gendered spatial distribution.

For faunal material, FBR, and lithics there was a secondary expectation for the model of gendered spatial distribution established for this study. The secondary expectation stated that if the distribution of artifacts was found to be uneven then there should be more artifacts on the women's side than the men's. The artifact class of lithics fits with this expectation as there were more artifacts recovered from the women's side of the living floor. However, for both faunal material and FBR there were more artifacts recovered from the men's side. Therefore, at this feature only lithics indicated that there was more activity within the women's space. When the results of the spatial analysis are corrected to include the secondary expectations of the model, only one of the four artifact classes can be said to fit with the expectations of the model (Table 6.2). The feature still does not fit the expectations of the model of gendered spatial distribution established for this study.

The spatial analysis of Stone Circle 8 was conducted for the artifact classes of ceramics, faunal, FBR, and lithics. The analysis found that at this feature ceramics, FBR, and lithics were not evenly distributed across the living floor, while faunal material was evenly distributed across the living floor. These results were expected for ceramics and faunal material but not for FBR and lithics. Since half of the artifact classes fit the expectations of the basic model of gendered space established for this study and half do not fit the expectations of the model, the feature has been assessed as split between fitting with the basic model and not fitting with the basic model (Table 6.1).

		Artifact Classes that Fit the Expectations of the Basic and Secondary Model	Artifact Classes that Do Not Fit the Expectations of the Basic and Secondary Model	Stone Circle Fits the Expectations of the Basic and Secondary Model
EbPi-51	**SC2**	Faunal, FBR, Lithics		Yes
	SC4	Lithics	Ceramics, Faunal, FBR	No
	SC8	Ceramics, Faunal, FBR, Lithics		Yes
EbPi-52	**SC8 (Interior Space)**	Faunal, FBR	Lithics	Yes
	SC8 (Exterior Space)	Ceramics, Faunal, FBR, Lithics		Yes
	SC8 (Interior and Exterior Space)	Ceramics, Faunal, FBR, Lithics		Yes
EbPi-53	**SC1**	Faunal	FBR, Lithics	No
	SC6	Faunal, Lithics		Yes
EbPi-61	**SC1**	Ceramics, Faunal, FBR, Lithics		Yes
EbPi-75	**SC4**		Ceramics, Faunal	No
	SC5	FBR	Faunal	Split
	SC9	Faunal		Yes

Table 6.2. Results of the spatial analysis by stone circle for the basic and secondary expectations of the model of gendered spatial distribution.

For faunal, FBR, and lithics there was a secondary expectation for the model of gendered spatial distribution established for this study. The secondary expectation stated that if the distribution of artifacts was found to be uneven then there should be more artifacts on the women's side than the men's. At this feature the artifact classes of FBR and lithics fit with this expectation as there were more artifacts recovered from the women's side of the living floor. Therefore, while not fitting with the basic model expectations, FBR and lithics do fit the secondary expectations of the model. When the results of the spatial analysis are corrected to include the secondary expectations of the model all of the four artifact classes can be said to fit with the expectations of the model (Table 6.2). The feature can then be said to fit the expectations of the model of gendered spatial distribution established for this study.

6.2.2 EbPi-52: Stone Circle 8

The spatial analysis of the interior space of Stone Circle 8 was conducted for the artifact classes of faunal, FBR, and lithics. The analysis found that at this feature faunal material and lithics were not evenly distributed across the living floor, while FBR was evenly distributed across the living floor. These results were expected for FBR but not for faunal material and lithics. Since only one of the three artifact classes fit the expectations of the basic model of gendered space established for this study the feature does not fit the basic model (Table 6.1).

For faunal material, FBR, and lithics there was a secondary expectation for the model of gendered spatial distribution established for this study. The secondary expectation stated that if the distribution of artifacts was found to be uneven then there should be more artifacts on the women's side than the men's. At this feature the artifact class of faunal material fit with this expectation as there were more artifacts recovered from the women's side of the living floor.

Therefore, while not fitting with the basic model expectations, faunal material does fit the secondary expectations of the model (Table 6.2). The artifact class of lithics does not fit with this expectation as there were more artifacts recovered on the men's side. When the results of the spatial analysis are corrected to include the secondary expectations of the model, two of the three artifact classes can be said to fit with the expectations of the model. The feature can then be said to fit the expectations of the model for gendered spatial distribution.

The spatial analysis of the exterior space of Stone Circle 8 was conducted for the artifact classes of ceramics, faunal, FBR, and lithics. The analysis found that at this feature ceramics, faunal material, and lithics were not evenly distributed across the living floor, while FBR was evenly distributed across the living floor. These results were expected for ceramics and FBR but not for faunal material and lithics. Since half of the artifact classes fit the expectations of the basic model of gendered space established for this study and half do not fit the expectations of the model, the feature has been assessed as split between fitting with the basic model and not fitting with the basic model (Table 6.1).

For faunal material, FBR, and lithics there was a secondary expectation for the model of gendered spatial distribution established for this study. The secondary expectation stated that if the distribution of artifacts was found to be uneven then there should be more artifacts on the women's side than the men's. At this feature the artifact classes of faunal material and lithics fit with this expectation as there were more artifacts recovered from the women's side of the living floor. Therefore, while not fitting with the basic model expectations, faunal material and lithics do fit the secondary expectations of the model (Table 6.2). When the results of the spatial analysis are corrected to include the secondary expectations of the model all four artifact classes can be said to fit with the expectations of the model for gendered spatial distribution.

The spatial analysis of the combination of the interior and exterior space of Stone Circle 8 was conducted for the artifact classes of ceramics, faunal, FBR, and lithics. The analysis found that at this feature ceramics, faunal material, and lithics were not evenly distributed across the living floor, while FBR was evenly distributed across the living floor. These results were expected for ceramics and FBR but not for faunal material and lithics. Since half of the artifact classes fit the expectations of the basic model of gendered spatial distribution established for this study and half do not fit the expectations of the model, the feature has been assessed as split between fitting with the basic model and not fitting with the basic model (Table 6.1).

For faunal material, FBR, and lithics there was a secondary expectation for the model of gendered spatial distribution established for this study. The secondary expectation stated that if the distribution of artifacts was found to be uneven then there should be more artifacts on the women's side than the men's. At this feature the artifact classes of faunal material and lithics fit with this expectation as there were more artifacts recovered from the women's side of the living floor. Therefore, while not fitting with the basic model expectations, faunal material and lithics do fit the secondary expectations of the model (Table 6.2). When the results of the spatial analysis are corrected to include the secondary expectations of the model all four artifact classes can be said to fit with the expectations of the model.

6.2.3 EbPi-53: Stone Circle 1 and Stone Circle 6

The spatial analysis of the interior space of Stone Circle 1 was conducted for the artifact classes of faunal, FBR, and lithics. The analysis found that at this feature FBR, and lithics were not evenly distributed across the living floor, while faunal material was evenly distributed across the living floor. These results were expected for faunal material but not for FBR and lithics. Since only one of the three artifact classes fits with the expectations of the basic model of gendered space established for this study the feature does not fit with the expectations of the basic model (Table 6.1).

For faunal material, FBR, and lithics there was a secondary expectation for the model of gendered spatial distribution established for this study. The secondary expectation stated that if the distribution of artifacts was found to be uneven then there should be more artifacts on the women's side than the men's. At this feature the artifact classes of FBR and lithics do not fit with this expectation as there were more artifacts recovered from the men's side of the living floor. Therefore, FBR and lithics do not fit with the expectations of either the basic or the secondary expectations of the model for gendered spatial distribution (Table 6.2). Therefore, this feature does not fit the expectations of the model for gendered spatial distribution.

The spatial analysis of Stone Circle 6 was conducted for the artifact classes of faunal and lithics. The analysis found that at this feature faunal material and lithics were evenly distributed across the living floor. These results were expected for faunal material and lithics. Since both of the artifact classes fit the expectations of the basic model of gendered space established for this study, the feature can be said to fit with the expectations of the basic model (Table 6.1).

6.2.4 EbPi-61: Stone Circle 1

The spatial analysis of Stone Circle 1 was conducted for the artifact classes of ceramics, faunal, FBR, and lithics. The analysis found that at this feature ceramics were not evenly distributed across the living floor, while faunal material, FBR, and lithics were evenly distributed across the living floor. These results were expected for all four artifact classes. Therefore, all four of the artifact classes fit with the expectations of the basic model of gendered space established for this study (Table 6.1).

6.2.5 EbPi-75: Stone Circle 4, Stone Circle 5, and Stone Circle 9

The spatial analysis of Stone Circle 4 was conducted for the artifact classes of ceramics and faunal. The analysis found that at this feature both artifact classes were unevenly distributed across the living floor. These results were expected for ceramics. However, more of the artifacts were recovered from the men's side. This result does not fit the model. These results were not expected for faunal material. Since both artifact classes do not fit the expectations of the basic model of gendered space established for this study, the feature cannot be said to fit with the expectations of the basic model (Table 6.1).

For faunal material, FBR, and lithics there was a secondary expectation for the model of gendered spatial distribution established for this study. The secondary expectation stated that if the distribution of artifacts was found to be uneven then there should be more artifacts on the women's side than the men's. At this feature the artifact class of faunal material does not fit with this expectation as there were more artifacts recovered from the men's side of the living floor. Therefore, faunal material does not fit with the expectations of either the basic model or the secondary expectations of the model for gendered spatial distribution established for this study (Table 6.2). The feature as a whole still does not fit the expectations of the model.

The spatial analysis of Stone Circle 5 was conducted for the artifact classes of faunal and FBR. The analysis found that at this feature FBR was evenly distributed across the living floor while faunal material was not evenly distributed across the living floor. These results were expected for FBR but not for faunal material. Since half of the artifact classes fit the expectations of the basic model of gendered space established for this study and half do not fit the expectations of the model, the feature has been assessed as split between fitting with the basic model and not fitting with the basic model (Table 6.1).

For faunal material, FBR, and lithics there was a secondary expectation for the model of gendered spatial distribution established for this study. The secondary expectation stated that if the distribution of artifacts was found to be uneven then there should be more artifacts on the women's side than the men's.

At this feature the artifact class of faunal material does not fit with this expectation as there were more artifacts recovered from the men's side of the living floor (Table 6.2). Therefore, the results for this feature are still split.

The spatial analysis of Stone Circle 9 was conducted for the artifact class of faunal. The analysis found that at this feature the artifact class of faunal material was found to be unevenly distributed across the living floor. This result was not expected for faunal material. Therefore, this artifact class does not fit the expectations of the basic model of gendered space established for this study, the feature cannot be said to fit with the expectations of the basic model (Table 6.1).

For faunal material, FBR, and lithics there was a secondary expectation for the model of gendered spatial distribution established for this study. The secondary expectation stated that if the distribution of artifacts was found to be uneven then there should be more artifacts on the women's side than the men's. At this feature the artifact class of faunal material does fit with this expectation as there were more artifacts recovered from the women's side of the living floor. Therefore, faunal material does fit with the secondary expectations of the model for gendered spatial distribution established for this study (Table 6.2). When corrected with the secondary expectations of the model the feature can be said to fit with the expectations of the model.

6.2.6 Summary of Results by Stone Circle

Based on the expectations of the basic model 25% of the stone circles fit with the expectations of the model for gendered spatial distribution established in this study. Forty-two percent of the features do not fit the expectations of the basic model, while 33% of the features were found to be split between fitting with the basic model and not fitting with the basic model (Table 6.3). This indicates that the basic model can be expected to found true only 25% of the time. However, because only 42% of the features were found to not fit the model the chances of incorrectly rejecting the model are less than half. When the chances of either accepting the model or coming up with a split result are combined, there is a 58% chance that the basic model will not be completely rejected. As a means of examining the spatial distribution for tipi rings, using the basic model alone to assess the space will just over half of the time result in not rejecting the basic model. However, further analysis must be completed in order to make a gendered assessment.

	Stone Circle Fits the Expectations of the Basic Model	**Stone Circle Fits the Expectations of the Basic and Secondary Model**
Yes	25%	67%
No	42%	25%
Split	33%	8%

Table 6.3. Percentage of stone circles that either fit or do not fit with the expectations of the model.

Once the secondary expectations of the model have been added to the results the model becomes a stronger tool of analysis. After the assessment of the secondary expectations have been added to the results 67% of the stone circles fit with the expectations of the model, 25% do not fit the expectations and 8% of the results are split (Table 6.3). These results indicate that in order to examine the spatial distribution for a tipi ring combining both the basic and secondary expectations of the model will result in stronger conclusions. Additionally, because the secondary expectations of the model add a gendered component to the artifact classes of faunal, FBR, and lithics, including the secondary expectations of the model allows for stronger engendered conclusions to be made regarding the gendered spatial distribution of artifacts across the living floor of the tipi.

The results of the analysis for EbPi-52 Stone Circle 8 indicate that the gendered distribution of space may extend from the interior spaces to the exterior spaces. When examined statistically both the interior spaces and the exterior spaces were found to be split between fitting with the expectations of the model and not fitting the expectations of the model. When corrected with the secondary expectations of the model both the interior and exterior spaces fit with the expectations of the model for gendered spatial distribution. If the feature is examined only by gross artifact counts per side, the interior spaces had more artifacts on the women's side for ceramics and faunal but more artifacts on the men's side for FBR and lithics. For the exterior space more artifacts were recovered on the women's side for the artifact classes of ceramics, faunal material, and lithics. More artifacts were recovered on the men's side for FBR. Whether the artifacts found outside of the tipi ring represent exterior activities or artifact flow out the door of the tipi, there is an indication that gendered spatial segregation becomes stronger when the exterior spaces are included in the engendered spatial analysis. This result has implications for campsite excavation strategies, as generally the interior of tipi rings are tested and partially excavated but the exterior spaces directly outside of tipi rings are often ignored.

6.3 Results and Interpretation of the Spatial Analysis by Artifact Class

6.3.1 Ceramics

The ethnographic task differentiation analysis found that women should be dealing with ceramics more frequently than men. Therefore, the model of gendered spatial distribution that was established for this study states that ceramics should be unevenly distributed across the living floor, with more ceramic artifacts on the women's side (Table 6.4). The spatial analysis found that ceramics will be unevenly distributed, with more artifacts on the women's side, 67% of the time (Table 6.5). In fact, of the six stone circles used in the spatial analysis of ceramics, only two stone circles were found not to fit with the expectations of the model. Therefore, it has been determined by this analysis that the artifact class of ceramics is a good indicator of the spatial distribution of gender for tipi rings.

Expectation of Model: The Ceramic artifacts will be unevenly distributed, with more artifacts on the women's side than the men's side.			
		Fits Expectations of Model	Comments
EbPi-51	SC2	N/A	
	SC4	No	Uneven distribution with more artifacts on the men's side.
	SC8	Yes	Uneven distribution with more artifacts on the women's side.
EbPi-52	SC8 (Interior Space)	N/A	
	SC8 (Exterior Space)	Yes	Uneven distribution with more artifacts on the women's side.
	SC8 (Interior and Exterior Space)	Yes	Uneven distribution with more artifacts on the women's side.
EbPi-53	SC1	N/A	
	SC6	N/A	
EbPi-61	SC1	Yes	Uneven distribution with more artifacts on the women's side.
EbPi-75	SC4	No	Uneven distribution with more artifacts on the men's side.
	SC5	N/A	
	SC9	N/A	

Table 6.4. Results of the spatial analysis for artifact class - Ceramics

	Ceramics	Faunal	FBR	Lithics
Fits Expectations of Model	67%	42%	63%	33%
Does Not Fit Expectations of Model	33%	58%	37%	67%

Table 6.5. Percentages for artifact class compliance with the basic model.

6.3.2 Fauna

The ethnographic task differentiation analysis found that women and men may be dealing with faunal material relatively equally. Therefore, the basic model of gendered spatial distribution that was established for this study states that faunal material should be evenly distributed across the living floor. However, the ethnographic task differentiation analysis also noted that women generally engaged in more activities within a tipi and at a campsite as a whole. In order to account for this a secondary expectation was added to the basic model for faunal material. The secondary expectation states that if faunal material is found to be unevenly distributed, then there should be more faunal material on the women's side (Table 6.6). The spatial analysis found that for the artifact class of faunal material there will be an even distribution 42% of the time (Table 6.5). This result does not fit with the model. For the distribution of uneven results, the spatial analysis found that there would be an uneven distribution with a higher loading of artifacts on the women's side 57% of the time and on the men's side 43% of the time. Therefore, for the 58% of cases where an uneven distribution was found, slightly more had a heavy loading of faunal artifacts recovered from the women's side.

Once the results of the spatial analysis have been corrected for the secondary expectations of the model, 75% of the features fit with the expectations of the model of gendered spatial distribution (Table 6.7). While the artifact class of faunal material was found to not fit with the basic expectations of the model, the artifact class can be said to fit the model after being corrected with the secondary expectations of the model for gendered spatial distribution. Based on the results of the analysis for faunal material it has been determined that the artifact class of faunal material can be used to assess the spatial distribution of gender for tipi rings.

Expectations of the Basic Model: The Faunal artifacts will be evenly distributed. Expectations of the Secondary Model: If there is an uneven distribution it would be expected on the women's side.				
		Fits the Expectations of the Basic Model	Fits the Expectations of the Basic and Secondary Model	Comments
EbPi-51	SC2	Yes	Yes	
	SC4	No	No	Uneven distribution with more artifacts on the men's side.
	SC8	Yes	Yes	
EbPi-52	SC8 (Interior Space)	No	Yes	Uneven distribution with more artifacts on the women's side.
	SC8 (Exterior Space)	No	Yes	Uneven distribution with more artifacts on the women's side.
	SC8 (Interior and Exterior Space)	No	Yes	Uneven distribution with more artifacts on the women's side.
EbPi-53	SC1	Yes	Yes	
	SC6	Yes	Yes	
EbPi-61	SC1	Yes	Yes	
EbPi-75	SC4	No	No	Uneven distribution with more artifacts on the men's side.
	SC5	No	No	Uneven distribution with more artifacts on the men's side.
	SC9	No	Yes	Uneven distribution with more artifacts on the women's side.

Table 6.6. Results of the spatial analysis for artifact class - Faunal

	Ceramics	Faunal	FBR	Lithics
Fits Expectations of Model	N/A	75%	78%	78%
Does Not Fit Expectations of Model	N/A	25%	22%	22%

Table 6.7. Percentages for artifact class compliance with the basic and secondary model.

6.3.3 Fire Broken Rock

The ethnographic task differentiation analysis found that FBR should be mainly associated with the hearth, which is usually centrally located. Therefore, the model of gendered spatial distribution that was established for this study states that FBR should be evenly distributed across the living floor. However, the ethnographic task differentiation analysis also noted that women generally engaged in more activities within a tipi and at a campsite as a whole. In order to account for this a secondary expectation was added to the basic model for FBR. The secondary expectation states that if FBR is found to be unevenly distributed, then there should be more FBR on the women's side (Table 6.8).

Expectations of the Basic Model: The FBR artifacts will be evenly distributed. Expectations of the Secondary Model: If there is an uneven distribution it would be expected on the women's side.				
		Fits the Expectations of the Basic Model	**Fits the Expectations of the Basic and Secondary Model**	**Comments**
EbPi-51	**SC2**	No	Yes	Uneven distribution with more artifacts on the women's side.
	SC4	No	No	Uneven distribution with more artifacts on the men's side.
	SC8	No	Yes	Uneven distribution with more artifacts on the women's side.
EbPi-52	**SC8 (Interior Space)**	Yes	Yes	
	SC8 (Exterior Space)	Yes	Yes	
	SC8 (Interior and Exterior Space)	Yes	Yes	
EbPi-53	**SC1**	No	No	Uneven distribution with more artifacts on the men's side.
	SC6	N/A	N/A	
EbPi-61	**SC1**	Yes	Yes	
EbPi-75	**SC4**	N/A	N/A	
	SC5	Yes	Yes	
	SC9	N/A	N/A	

Table 6.8. Results of the spatial analysis for artifact class - Fire Broken Rock.

The spatial analysis found that for the artifact class of FBR there will be an even distribution 63% of the time (Table 6.5). This result does not fit the expectations of the basic model. For the distribution of uneven results, the spatial analysis found that there would be an uneven distribution with a higher loading of artifacts on the women's side 50% of the time and on the men's side 50% of the time. Therefore, for the 37% of cases where an uneven distribution was found, there was an equal distribution between greater frequencies of artifacts on either side.

Once the results of the spatial analysis have been corrected for the secondary expectations of the model, 78% of the features fit with the expectations of the model of gendered spatial distribution (Table 6.7). The artifact class of FBR was found to fit with the basic expectations of the model. However, it was also found that correcting the results with the secondary expectations of the model of gendered spatial distribution FBR will be found with equal frequency on either the women's or men's side. Based on these results this study has found that in the cases where an uneven distribution is found the artifact class of FBR cannot be used to indicate gendered spatial segregation.

6.3.4 Lithics

The ethnographic task differentiation analysis found that women and men may be dealing with lithics relatively equally. Therefore, the basic model of gendered spatial distribution that was established for this study states that lithics should be evenly distributed across the living floor. However, the ethnographic task differentiation analysis also noted that women generally engaged in more activities within the tipi and at the campsite as a whole. In order to account for this a secondary expectation was added to the basic model for lithics. The secondary expectation states that if the artifact class of lithics is found to be unevenly distributed, then there should be more lithics on the women's side (Table 6.9).

Expectations of the Basic Model: The Lithics artifacts will be evenly distributed. Expectations of the Secondary Model: If there is an uneven distribution it would be expected on the women's side.				
		Fits the Expectations of the Basic Model	Fits the Expectations of the Basic and Secondary Model	Comments
EbPi-51	SC2	Yes	Yes	
	SC4	No	Yes	Uneven distribution with more artifacts on the women's side.
	SC8	No	Yes	Uneven distribution with more artifacts on the women's side.
EbPi-52	SC8 (Interior Space)	No	No	Uneven distribution with more artifacts on the men's side.
	SC8 (Exterior Space)	No	Yes	Uneven distribution with more artifacts on the women's side.
	SC8 (Interior and Exterior Space)	No	Yes	Uneven distribution with more artifacts on the women's side.
EbPi-53	SC1	No	No	Uneven distribution with more artifacts on the men's side.
	SC6	Yes	Yes	
EbPi-61	SC1	Yes	Yes	
EbPi-75	SC4	N/A	N/A	
	SC5	N/A	N/A	
	SC9	N/A	N/A	

Table 6.9. Results of the spatial analysis for artifact class – Lithics.

The spatial analysis found that for the artifact class of lithics there will be an even distribution 33% of the time (Table 6.5). This result does not fit the expectations of the basic model. Therefore, the results of the spatial analysis indicate that the expectations of the model will happen with a lower frequency than an uneven distribution on either gendered side of the living floor. For, the distribution of uneven results, the analysis found that there would be an uneven distribution with a higher loading of artifacts on the women's side 67% of the time and on the men's side 33% of the time. Therefore, for the 67% of cases where an uneven distribution was found many had a heavier loading of lithics artifacts recovered from the women's side of the living floor.

Once the results of the spatial analysis have been corrected for the secondary expectations of the model, 78% of the features fit with the expectations of the model of gendered spatial distribution (Table 6.7). Therefore, while the artifact class of lithics was found not to fit with the basic expectations of the model, correcting the results with the secondary expectations of the model of gendered spatial distribution greatly strengthens the result. From these results this study has found that in the cases where an uneven distribution is found the artifact class of lithics is a good indicator of gender spatial segregation.

6.3.5 Summary of Results by Artifact Class

When the results of the spatial analysis are broken down by artifact class the best class to use to examine gender within a tipi ring is ceramics. The ethnographic analysis of task differentiation found that ceramics should have been more often associated with women's activities than with men's. Therefore, the model of gendered spatial distribution established for this study predicted that ceramic artifacts should be recovered with a higher frequency on the women's side of the tipi. The results of the analysis confirm that this assumption is reflected in the archaeological record. Therefore, this study has found that when ceramics are recovered during excavation of a tipi ring there will be statistically more ceramic artifacts recovered from the women's side, in at least 67% of cases (Table 6.5).

This study has found that for the artifact classes of faunal material, FBR, and lithics it will be more difficult to examine the gendered distribution of space. The ethnographic analysis of task differentiation found that all three artifact classes could potentially be equally associated with either men's or women's spaces, based on activities undertaken and location of activity within the tipi. However, for all three artifact classes it was felt that a secondary expectation should be added to the basic model of gendered spatial distribution within the tipi ring. This secondary expectation was added because of the volume of activities undertaken by both genders within the tipi. The ethnographic analysis found that women engaged in more activities than men within the tipi and at the campsite as a whole. Therefore, it was anticipated that if the results do not fit the basic expectations, then they should fit with the secondary expectations.

This study has found that when faunal material is recovered during the excavation of tipi rings less than half of the results will show an even distribution. Therefore, the result of the spatial analysis of gendered spatial distribution is that the basic model can only be expected 42% of the time (Table 6.5). However, when the results of the basic model are combined with the secondary expectations of the model this analysis found the result can be expected to fit the model 75% of the time (Table 6.7). When an uneven distribution is found there will have been more artifacts recovered from the women's side of the tipi 57% of the time. Therefore, this study has found that the distribution of faunal material can be an indicator of gendered spatial distribution, in those cases where an uneven distribution is found.

This study has found that when FBR is recovered during the excavation of tipi rings more than half of the results will show an even distribution. Therefore, the result of the spatial analysis of gendered spatial distribution is that the basic model can be expected 63% of the time (Table 6.5). When the results of the basic model are combined with the secondary expectations of the model this analysis found the result can be expected to fit the model 78% of the time (Table 6.7). However, the results of the analysis found that there is an equal chance that there will be an uneven distribution with greater concentrations of artifacts per side for either the women's or men's side. Therefore, this study found that the distribution of FBR cannot be used to examine gendered spatial distribution.

This study has found that when lithics are recovered during the excavation of tipi rings less than half of the results will show an even distribution. Therefore, the result of the spatial analysis of gendered spatial distribution is that the basic model can only be expected 33% of the time (Table 6.5). However, when the results of the basic model are combined with the secondary expectations of the model this analysis found the result can be expected to fit the model 78% of the time (Table 6.7). When an uneven distribution is found there will have been more artifacts recovered from the women's side of the tipi 67% of the time. Therefore, this study has found that the distribution of lithics can be an indicator of gendered spatial distribution, in those cases where an uneven distribution is found.

6.4 Summary

This chapter has presented a discussion and interpretations of the results of the gendered spatial analysis that was conducted for this study. It was found that the model established in this study can be used to examine gendered spaces within tipi rings. The results for each of the four artifact classes used in the analysis were examined individually in order to assess the applicability of the model. Ceramics were found to be a good indicator of the gendered distribution of space at tipi rings. It was determined that faunal material and lithics could both be used to examine the gendered spatial distribution, in those cases where an uneven distribution across the living floor was found. However, it was found that FBR could not be used to examine the gendered distribution of space. The results indicate that when an uneven distribution of faunal material and lithic artifacts is found, the heavier loading will most often be on the women's side of the living floor. The results of the analysis indicate that the best artifact classes to use when examining gendered spatial distributions at tipi rings is ceramics, followed by lithics and faunal material.

It was also determined that the spaces directly exterior to tipi rings should be excavated along with the interior spaces, because gendered spatial pattering appears to extend to the exterior spaces. However, exterior spaces were only excavated at one of the features used in this analysis. It is recommended that further testing of exterior spaces be conducted in order to verify the results of this analysis for the exterior spaces of tipi habitations. Additionally, if the exterior spaces around the entire tipi ring were excavated this may allow for more accurate assessment of structure doorway placement and the extent of gendered spatial patterning around the circumference of the structure.

CHAPTER SEVEN

SUMMARY AND CONCLUSIONS

7.1 Summary

This thesis has established and tested a model for examining the spatial distribution of gender at tipi ring sites on the Plains. Chapter One introduced the study and summarized the research and data presented by chapter. Chapter Two detailed the history and the current directions of tipi ring research on the Plains that are relevant to this study. Chapter Three presented and explored gender theory in archaeology, intrasite spatial analysis, and four studies that have already examined gender processes at Plains hunter-gatherer campsites. Chapter Four presented some of the known issues for using ethnographic and historical works to inform archaeological research. The task differentiation model was then adapted for use in this study and the ethnographic and cultural data that had been compiled for the Blackfoot were detailed along with the findings of the Blackfoot task differentiation analysis. The way that the Blackfoot segregated space within a tipi was presented, along with examples from two other Plains cultures to show that not all Plains culture groups structured space in the same way. Chapter Five presented the sites and features used in the spatial analysis, detailed the model for gendered spatial distribution as established in this study through the research presented in Chapter Four, detailed the methodology used for the spatial analysis, and presented the results of the spatial analysis. In Chapter Six the results of the spatial analysis were discussed and interpreted first by site and feature and then by artifact class. In the next section of this chapter, Chapter Seven, some of the implications for future gender research on the Plains will be presented along with concluding remarks.

7.2 Implications for Future Gendered Research and Conclusions

The research conducted in this study focused on campsite activities. The task differentiation analysis that was completed for this study was found to be a valuable tool for the examination of gender processes at northern Plains campsites. It was found that at least half of the activities recorded were engaged in exclusively by women, one of the activities was engaged in exclusively by men, and the rest could have been completed by either gender or both gender groups working together.

The analysis of the gendered distribution of space within the tipi for the Blackfoot culture indicates that gender processes should be visible archaeologically at Blackfoot campsites. The task differentiation data compiled in this study is applicable for further gendered analyses at Plains campsites. However, the presentation of the differing spatial structure within the tipi for the Dakota Sioux and the Cheyenne has been supplied as a cautionary note that all Plains culture groups may not have structured domestic space in the same ways. As also noted by Arnold (2004), there is a danger in using a pan-Plains cultural approach. Rather than continuing to assume that all Plains cultures were essentially the same we need to look more closely at each contact period culture individually. This will undoubtedly help us to understand variation within archaeological culture groups. It is hoped that the success of the analysis presented here will encourage other researchers to complete detailed task differentiation and spatial distribution analyses for other Plains culture groups.

The model for the gendered distribution of space established for this study was successfully tested in the spatial analysis. When both the basic and secondary expectations of the model are combined 67% of the sample was found to fit with the model for the gendered distribution of space. Therefore, it was determined that, for this sample of tipi rings, gendered spaces could be defined. The key to such an analysis is the placement of the doorway. There is no way to know with absolute certainty where the doorway of the structure was. However, archaeologists have grappled with this problem before. The methodology for doorway placement used here has combined a number of factors in order to determine the best possible placement for the doorway.

Once the doorway location has been determined a similar analysis of gendered spatial distribution can be completed for any completely excavated tipi ring on the Plains, as long as discrete occupation levels can be identified. The results of the analysis will be strongest when a high number of artifacts are recovered. In this study only total artifact counts greater than six were included in the spatial analyses. With lower total numbers of artifacts it becomes extremely difficult to accurately quantify the results of the spatial analysis. Therefore, tipi ring features with relatively large numbers of artifacts will allow for the strongest results.

The analysis of gendered spatial distribution completed in this thesis successfully demonstrated that, for this sample of stone circles, gendered spatial distribution within the tipi ring could be examined archaeologically. The model that was established in this study detailed the gendered spatial distribution expected for four artifacts classes. These artifact classes were ceramics, faunal material, fire broken rock, and lithics. The expectation of the model for ceramics was that there should be more ceramic artifacts recovered on the women's side of the living floor. This result was obtained 67% of the time for the six tipi ring features where ceramics were recovered. This indicates that ceramics, when recovered, can be used to examine the gendered distribution of space at a tipi ring.

The expectations of the model are similar for faunal material and lithics. For both of these artifact classes it was found that each may be equally associated with either side of the tipi. However, it was also noted that women were engaged in substantially more activities, which in itself should cause artifacts and debitage to be more highly associated with women's space. This assumption was tested on the ten tipi rings used in the analysis. For faunal material, the results fit the expectations of the model 75% of the time. For lithics, the results fit the expectations of the model 78% of the time. For both faunal material and lithics, when an uneven distribution was found, the greater concentration of artifacts was more often associated with women's space. These results indicate that both of these artifact classes can be used to examine the gendered distribution of space at tipi rings.

The expectations of the model were the same for FBR as they were for faunal material and lithics. The spatial analysis found that, for this sample, FBR was either evenly distributed or equally distributed on either the women's or the men's side. Therefore, it was determined that FBR could not be used to examine gendered spatial distribution within tipi rings.

As indicated by the results of this study, three of the four artifact classes used in the analysis can be examined for gendered spatial distribution at tipi rings. The results indicate that the best artifact class to use when examining gendered spatial distribution within tipi rings is ceramics, followed by lithics and faunal material.

At the feature, EbPi-52 Stone Circle 8 an excavation block was extended outside of the tipi ring. The excavation was continuous, from the interior spaces through to the exterior spaces. The analysis found that the doorway to the structure was most likely located where this excavation block extended into the exterior spaces. This provided an opportunity to examine the possibility that the gendered distribution of space extends to the exterior spaces directly outside of the tipi. It was determined that, at this feature, the gendered distribution of space does extend to the exterior spaces. This result indicates that when examining gendered spatial distribution at Plains campsites the entire tipi ring should be excavated along with the spaces directly exterior to the tipi ring.

The methodology used in this spatial analysis only considered the gross counts of artifacts. This method was used in order to determine if the model was valid. The model has been shown to be valid. Therefore, further testing of the model with the same methodology is required in order to either confirm or negate the results of this analysis. Additionally, the model should also be applicable to various other methodologies and at other levels of detail, including but not limited to microdebitage analysis, phytolith analysis, residue analysis, usewear analysis, and refitting analysis. Also, the gross artifact counts could be broken down into various size classes and point pattern analyses could be completed.

The results of this analysis have determined that gendered spatial distribution can be examined for Plains tipi rings. The results of the analysis have also determined that the best artifact class to use when examining gendered spatial distribution at tipi rings is ceramics, followed by lithics and faunal material.

The fact that gendered spatial distribution was recovered in this study shows that certain cultural processes of the people who inhabited the tipis that once stood where tipi rings are found can be examined archaeologically. In this study, the results of the spatial analysis indicate that gendered spaces can be seen archaeologically. With further testing, modification, and application of the methodologies explored in this study, women and men, as well as other members of the social group, will become more common-place in archaeological interpretations of northern Plains campsites.

In order to further test the results of this study more tipi rings on the Plains need to be fully excavated. Additionally, in light of the indication that gendered spatial distributions may extend to the spaces directly exterior to the tipi ring, more of these exterior spaces should also be excavated.

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APPENDIX A

BLACKFOOT TASK DIFFERENTIATION TABLES

Activity/Task	Actor (woman/man/etc)	Materials Associated	Tools Associated	Features Associated	Reference	Comments
backrest weaving	N/A	stakes, willow (*Salix* spp.) branches, cord, sinew	N/A	N/A	Wissler 1910:54-55	
backrest making	N/A	peeled willow (*Salix* spp.) rods, sinew cord, red or blue trade cloth, porcupine (*Erethizon dorsatum)* quills or beadwork, paint	knife	N/A	Ewers 1958:116	
beds	N/A	dried grass or rawhide, bison (*Bison bison*) robes	N/A	N/A	Ewers 1958:116	

Table A.1. Backrest weaving and beds.

Activity/Task	Actor (woman/man/etc)	Materials Associated	Tools Associated	Features Associated	Reference	Comments
berry picking	women and girls	rectangular rawhide or soft dressed skin bags, larger storage bags	N/A	N/A	Wissler 1910:21	
berry gathering	children	N/A	N/A	N/A	McClintock 1968 [1910]:246	
sarvis berries (*Amelanchier alnifolia*)	women	N/A	N/A	N/A	Grinnell 2003 [1893]:203	Saskatoon berries -gathered and dried
choke cherries (*Prunus virginiana)*	women	N/A	N/A	N/A	Grinnell 2003 [1893]:203	gathered and dried "gathered when ripe, and pounded up, stones and all."
bull berries (*Shepherdia argentea*)	women	N/A	N/A	N/A	Grinnell 2003 [1893]:203	
white berry of the red willow (*Cornus stolonifera*)	women	N/A	N/A	N/A	Grinnell 2003 [1893]:203	
picking berries	girls	N/A	N/A	N/A	Ewers 1958:102	taught by mothers in preparation for marriage
gathering berries	women	N/A	N/A	N/A	Kidd 1986:41-44	girls were trained by their mothers
berry picking	women and girls	N/A	N/A	N/A	Grinnell 1913:203	
berry processing	(inferred) women and girls	N/A	hafted maul/hammer	N/A	Wissler 1910:21-22	recycled when found at old campsites
berry drying	(inferred) women and girls	dried-stored in parflesh bags	N/A	N/A	Wissler 1910:21	dried in sun
drying berries	women	N/A	N/A	N/A	Hanna 1988:35	
drying berries	women	N/A	N/A	N/A	Ewers 1985:128	
drying berries	women	N/A	N/A	N/A	Blackfoot Gallery Committee 2001:27	
drying berries	women	large perforated hide	N/A	N/A	Hellson and Gadd 1974:94	
drying berries	women and girls	N/A	N/A	N/A	Grinnell 1913:203	
crushing berries	women	fresh berries	mano, metate	N/A	HungryWolf 1982:106	
pemmican berries	women	perforated hide, choke cherries (*Prunus virginiana),* saskatoon berries *(Almanchier alnifolia)*	stone maul	N/A	Hellson and Gadd 1974:94	dried and crushed

Table A.2. Berry Gathering and processing.

Activity/Task	Actor (woman/man/etc)	Materials Associated	Tools Associated	Features Associated	Reference	Comments
marrow extraction	(inferred) women and girls	N/A	hafted maul/hammer	N/A	Wissler 1910:22	
marrow extraction	women	bones	big rock	N/A	HungryWolf 1982:187-188	
breaking bone	women	N/A	commercial axe, stone maul	N/A	Wissler 1910:31	

Table A.3. Bone processing.

Activity/Task	Actor (woman/man/etc)	Materials Associated	Tools Associated	Features Associated	Reference	Comments
butchering	both	N/A	N/A	N/A	A. Kehoe 1995:114	
camp butchering	men and women	N/A	metal knife, humerus club	N/A	Wissler 1910:41-42	women were especially involved in butchering in or near camp (Wissler 1910:41)
butchering	women	N/A	axe, knives	N/A	HungryWolf 1982:184	possibly secondary butchering

Table A.4. Camp Butchering.

Activity/Task	Actor (woman/man/etc)	Materials Associated	Tools Associated	Features Associated	Reference	Comments
ceremonies	men and women	N/A	N/A	N/A	Wissler and Duvall 1908:18	
adoption ceremony	men and women	pipe, forked stick, live coal, dried sweet grass (*Hierochloe odorata),* red painted sacred stick, red paint, bison (*Bison bison*) and elk (*Cervus elaphus)* hides, rattles, berry and tongue soup	N/A	N/A	McClintock 1968 [1910]:31-35	
Beaver Medicine Ceremony	men and women	forked stick covered with sacred paint, live coals, bag of dried sweet grass (*Hierochloe odorata*), prongs 'sticks', bison (*Bison bison*) hides, rattles, pipe, root digger, Beaver bundle and its contents, medicine whistle, sacred paint (red?), string of bison (Bison bison) hooves	N/A	N/A	McClintock 1968 [1910]:78-102	children are present
pipe ceremony	men only (not specifically stated)	pipe, tobacco	N/A	N/A	Haig 1991:166-67	
Thunder Dance Ceremony	men and women	bundle-skins, small stuffed animals, pipe, 2 pipe stems (one for men and one for women), wooden whistle, rattles, etc.; powderized sweet grass (*Hierochloe odorata*), berry broth and rice, tallow, red paint, black paint, 2 willow (*Salix* spp.) sticks, tobacco	N/A	square hole for altar	Wilson 1958:6-12	
ceremonial rattles	N/A	raw hide, wicker frame, pebbles, short handles	N/A	N/A	McClintock 1968 [1910]:83	
making ceremonial objects	men	N/A	N/A	N/A	Kidd 1986:41	
ritual smoking	men, women and children	pipe	N/A	N/A	Hellson and Gadd 1974:17	

Table A.5. Ceremonies.

Activity/Task	Actor (woman/man/etc)	Materials Associated	Tools Associated	Features Associated	Reference	Comments
preparing food	women	N/A	N/A	N/A	Grinnell 2003 [1893]:182	
preparing foods	girls	N/A	N/A	N/A	Ewers 1958:102	taught by mothers in preparation for marriage
cooking food	women	N/A	N/A	N/A	Kidd 1986:41-44	girls were trained by their mothers
cooking food	women	N/A	N/A	N/A	McClintock 1968 [1910]:189	
cooking food	women and girls	N/A	N/A	outside hearth	McClintock 1968 [1910]:381	They were also "...making clothes and moccasins and playing Indian games."
cooking food	women	kettle, berries	N/A	outside hearth, tripod over the hearth	McClintock 1968 [1910]:408	
cooking food	women	N/A	N/A	hearth (inside or outside)	HungryWolf 1982:117	
cooking food	women	pot, various parts of the animal	N/A	hearth	HungryWolf 1982:184-189	
pit roasting	N/A	linings of hot stones and brush (willow (*Salix* spp.) branches and grass), and water, 2 or more fresh hides to close it off and soil	N/A	pit (depth of 4 spans of the thumb and forefinger), fire at top	Wissler 1910:25-26	for roasting fetal and new born bison (*Bison bison*) calves -start in evening and ready by next day
roasting	women	N/A	pointed stick for testing doneness	hearth-roasted vegetables and meat on coals, meat sometimes on spit	Wissler 1910:24-25	
roasting	women	hot stones, willow (*Salix* spp.) branches and grasses, meat, branches and grasses and earth (hides may also be used to wrap and cover the meat)	N/A	roasting pit-hole lined with hot stones, willow (*Salix* spp.) branches and grasses, meat, and earth, and a hearth	Kidd 1986:106	
boiling meat	N/A	skin, pegs, meat, water, red hot stones	N/A	boiling pit, hearth	Grinnell 2003 [1893]:205	
boiling meat	women	pot, tripod	N/A	hearth	Kidd 1986:106	
boiling meat	women	hide lining, pegs, hot stones	N/A	boiling pit, hearth	Kidd 1986:106	
boiling meat	women	bison stomach pit liners, copper and iron kettles	N/A	boiling pit	Blackfoot Gallery Committee 2001:27	
boiling meat	women	stone bowl, hide kettle, heated stones, wood, two short handled forked sticks	N/A	boiling pit or staked above ground, hearth for heating stones	Grinnell 1913:193-194	
boiling food	women	meat, roots, seasonings, hide pit liner, water hot stones	N/A	boiling pit	Hellson and Gadd 1974:99	
soup boiling	women, men on war party excursions	fresh hide or paunch [stomach], sticks to hold it up (~4 at ~ 40cm in length and 15cm apart), hot stones	N/A	N/A	Wissler 1910:26-27	
making berry soup	women	saskatoons (*Amelanchier alnifolia*), assorted roots, fat, water, choke cherry (*Prunus virginiana*)	N/A	N/A	Hellson and Gadd 1974:25-29	

Table A.6. Cooking.

Activity/Task	Actor (woman/man/etc)	Materials Associated	Tools Associated	Features Associated	Reference	Comments
driving stakes	women	N/A	commercial axe, stone maul	N/A	Wissler 1910:31	

Table A.7. Driving Stakes.

Activity/Task	Actor (woman/man/etc)	Materials Associated	Tools Associated	Features Associated	Reference	Comments
the wheel game	young people	netted hoop, pointed sticks	N/A	N/A	Wissler 1911:57	
the wheel gambling	N/A	7 cm wheel with 6-7 spokes, beads, two arrows; small pebble counters	N/A	N/A	Wissler 1911:60	
the wheel gambling	men	~10 cm wheel with 5 spokes, beads, logs, arrows	N/A	N/A	Hanna 1988:35	
wheel game	young people	netted hoop, pointed sticks for darts	N/A	N/A	Wissler 1911:57	
hoop game	men	round ring (~8 cm in diameter), bound with cloth or leather, arrows	N/A	N/A	Glover 1962:261-262; Tyrrell 1916:359	
it-se'-wah game	men	wheel (10 cm in diameter), 5 spokes to string coloured beads of bone or horn, log, arrow	N/A	N/A	Grinnell 2003 [1893]:183-184	gambling
wheel game or hoop and pole game	men	2 logs, small hoop about 3 inches around (made of fire-hardened bison (*Bison bison*) sinew), 5 or more rawhide spokes strung with beads, arrow-like poles (~90 cm long with metal head and feathering)	N/A	N/A	Ewers 1958:156-157	
wheel gambling	N/A	wheel (18 cm diameter) with 6-7 spokes, beads on spokes, 2 arrows	N/A	N/A	Wissler 1911:60	
Wheel Gambling Game	men	wheel (3 inch in diameter, string spokes with coloured beads (all colours-black, white, blue, etc.), 2 arrows with points, 2 boards, beads used for counters (5, 10, 15, or more)	N/A	N/A	Duvall 1904-1911:485	

Table A.8. Games.

Activity/Task	Actor (woman/man/etc)	Materials Associated	Tools Associated	Features Associated	Reference	Comments
wheel and arrow	men	arrows, small wheel with beaded spokes	N/A	N/A	McClintock 1968 [1910]:392-393	gambling game
Cree woman	adults and youths	ball	N/A	N/A	Wissler 1911:58	pairs 'keep away' type game
Cree Women's game	teenaged girls and boys	hair stuffed ball	N/A	N/A	Ewers 1958:154	could be played by both girls and boys or girls alone, somewhat like volleyball but played in a circle
Cree Women	adults and youths	ball (rawhide stuffed with hair)	N/A	N/A	Wissler 1911:58	
The Cree Women	men, women, boys, girls	ball	N/A	N/A	Duvall 1904-1911:488	
the hand game	men	4 hiding sticks (wood or bone), 12 counters, a number of drumsticks (unknown material) for beating time on lodge poles (set up in front of players)	N/A	N/A	Wissler 1911:59	hiding sticks were the thickness of a pencil and ~7 cm in length, counters were ~ 38 cm long and made of plain wood sharpened at one end for sticking in front of players, drumsticks are short clubs of no definite form
the hand game	women	4 hiding sticks (wood or bone), 3 counters, a number of drumsticks (unknown material) for beating time on lodge poles (set up in front of players)	N/A	N/A	Wissler 1911:60	same game and materials as for men but with 3 instead of 12 counting sticks
hands game	men	2 small oblong bones (one with a black ring around it), counting sticks	N/A	N/A	Grinnell 2003 [1893]:184	gambling
hand game	men or women	4 hiding sticks (wood or bone), 12 counter sticks (3 three counting sticks for women), string	N/A	N/A	Wissler 1911:59-60	
hand game	women and men	ten counting sticks, hand drums, tipi poles, two bones	N/A	N/A	Blackfoot Gallery Committee 2001:35	
fancy gambling	men	2 small pieces of cylindrical bone, one unmarked the other banded with rawhide in the centre, lodgepole, clubs to beat on the lodgepole, 12 willow (*Salix* spp.) sticks	N/A	N/A	Ewers 1958:155	
fancy gambling	men or women	4 hiding sticks (2 long and 2 short), 12 counting sticks (women use 3 counting sticks), short drum sticks	N/A	N/A	Duvall 1904-1911:481-484	
gambling game	N/A	beads (for waging), pebbles	N/A	N/A	Thwaites 1906:110	the stones are moved about in one's hands, another tries to guess the number of pebbles

Table A.8. Games (continued).

Activity/Task	Actor (woman/man/etc)	Materials Associated	Tools Associated	Features Associated	Reference	Comments
travois gambling	women	4 'sticks' of bison (*Bison bison*) bone	N/A	N/A	Wissler 1911:60-61	each stick has one decorated and one blank side
travois game	women	5 flat pieces of bison (*Bison bison*) bone with various incised lines on one side, hollow femur/humerus bone shaker	N/A	N/A	Ewers 1958:154-155	
travois gambling	women	four bone 'sticks' (decorated and incised)	N/A	N/A	Wissler 1911:60-61	
Travois Gambling	women	3 or 4 bones with different makings on both sides	N/A	N/A	Duvall 1904-1911:486	
gambling game	women	small differently numbered pieces of wood, wooden bowl	N/A	N/A	Ewers 1958:155	
gambling game	men	bowl, small pieces wood (differing shapes)	N/A	N/A	Glover 1962:262; Tyrrell 1916:359-360	
batting ours	men, women, youths	rough sticks with curved ends for bats, baseball sized ball of hide stuffed with skin	N/A	N/A	Wissler 1911:58	
batting ours	teenaged girls and boys	hair-stuffed skin-covered ball, wild cherry (*Prunus* spp.) curved sticks, upright stakes and goal ends	N/A	N/A	Ewers 1958:153-154	
batting ours	men, women, youths	curved rough sticks, balls (rawhide stuffed with hair)	N/A	N/A	Wissler 1911:58	
Batting the Ball	women, men, boys, girls	bat bent at one end, ball	N/A	N/A	Duvall 1904-1911:487	
kill the button	men and women	inside cleared lodge, rails, sticks, betting stakes, 2 bones -1 white, 1 red	N/A	N/A	Hanna 1988:35-36	similar to Wissler's hand game
hiding bones	men	marked flat red deer tooth	N/A	N/A	Glover 1962:262-263; Tyrrell 1916:360-361	
stick game	women, men, children	20 sticks (36 cm long, 1 cm in diameter, feather poss. magpie (*Pica pica*) at one end, painted red, little bells among the feathers), 2 guessing sticks (about 36 cm long, eagle (*Haliaeetus leucocephalus and/or Aquila chrysaetos*) feathers at the end, little bells), hiding sticks (4 bones, 2 blue and 2 white), hair piece (looks like wheel game wheel with beads in it), sweet grass (*Hierochloe odorata)*, red paint	N/A	N/A	James Eagle Child in Duvall 1904-1911:471-475	
toys and games	both girls and boys	N/A	N/A	N/A	Wissler 1911:53	tag, hide-and-seek, jumping rope, stilt walking, rawhide coasting (toboggan like), slings, tops, dolls, ball games, shooting contests, racing, and follow the leader
play	children	mud figures, bull horn tops, thong whips	N/A	N/A	Hanna 1988:35	

Table A.8. Games (continued).

Activity/Task	Actor (woman/man/etc)	Materials Associated	Tools Associated	Features Associated	Reference	Comments
doll making	women	birch limb, buckskin or trade cloth, grass, thread, beads, human or horse (*Equus caballus*) hair	knife	N/A	Ewers 1958:146-147	for girls
hobbyhorse making	women and men	peeled tree limb or trunk, horse (*Equus caballus*) hair, bison (*Bison bison*) hide or old saddle, rawhide reins, stick	N/A	N/A	Ewers 1958:147	for girls and boys
coasters	boys	bison (*Bison bison*) ribs, sticks, lashings	N/A	N/A	Wissler 1911:54	
coasting	boys	sleds made of bison (*Bison bison*) ribs	N/A	N/A	Duvall 1904-1911:499	
coasting	boys	sled of ribs, cross sticks, rawhide sheet	N/A	N/A	Wissler 1911:54	
buffalo rib sliders	boys	bison (*Bison bison*) ribs, rawhide rope, willow (*Salix* spp.) branches, bison (*Bison bison*) tail ornament	N/A	N/A	Ewers 1958:151	Winter activity
buffalo rib sliders	boys	bison (*Bison bison*) ribs	N/A	N/A	Grinnell 2003 [1893]:185	sliding down hills
coasting	girls	sleds made of sheets of rawhide	N/A	N/A	Duvall 1904-1911:499	
coasting	girls	rawhide sheet	N/A	N/A	Wissler 1911:54	
buffalo hide sliders	girls	bison (*Bison bison*) hides	N/A	N/A	Ewers 1958:151	Winter activity
skunk	children	burning stick	N/A	N/A	Wissler 1911:58	
Skunk Game	boys	2 sticks, 1 with burning end	N/A	N/A	Duvall 1904-1911:495	
hobby horse	girls	stick, miniature saddle	N/A	N/A	Wissler 1911:53-54	
playing house	girls	small lodge poles, small tipi covers, dolls, with clothing, knife sheaths, tanning-tools, baby cases, painted parfleches, medicine case hanging from a tripod	N/A	N/A	McClintock 1968 [1910]:390	
throwing willow arrows	girls	large arrow with string of plaited horse (*Equus caballus*) hair attached at one end, smaller arrows	N/A	N/A	McClintock 1968 [1910]:391-392	
hiding bones	girls	carved and decorated pronghorn (*Antilocapra Americana)* bones	N/A	N/A	McClintock 1968 [1910]:392	
miniature travois making	girls	N/A	N/A	N/A	Ewers 1958:148	for playing house
miniature parfleche making	girls	N/A	N/A	N/A	Ewers 1958:148	for playing house

Table A.8. Games (continued).

Actor (woman/man/etc)	Materials Associated	Tools Associated	Features Associated	Reference	Comments
girls	N/A	N/A	N/A	Ewers 1958:148	for playing house
girls	N/A	N/A	N/A	Ewers 1958:148	for playing house
girls	N/A	N/A	N/A	Ewers 1958:148	tag game
girls	stick with natural bend and 2 parallel ends	N/A	N/A	Wissler 1911:53-54	
women	dolls, small tipis, household furnishings, small medicine bundles, cradleboards, baby dolls, horses and travois	N/A	N/A	HungryWolf 1982:247	most toys were miniature replicas of adult items, using the same materials
men, boys, women	bows, arrows, whips, spinning tops, drums, horse gear, dolls (made by women), branches	N/A	N/A	HungryWolf 1982:247	most toys were miniature replicas of adult items, using the same materials
boys	bison (*Bison bison*) 'foot bones' or pebbles or mud for horses	N/A	N/A	Wissler 1911:54	
boys	birch (*Betula* spp.), buckskin lash whips	N/A	N/A	Wissler 1911:54	played in soft snow
boys	water-warn egg-shaped pebbles, bark lash whips	N/A	N/A	Wissler 1911:54-55	played on smooth ice, sometimes hard snow
boys	mud, stick	N/A	N/A	Wissler 1911:55	attach mud to stick and hurl mud - furthest wins
boys	bows, arrows, shafts	N/A	N/A	Wissler 1911:55-56	
boys	stake arrow, arrows, bows	N/A	N/A	McClintock 1968 [1910]:392	
boys	N/A	N/A	N/A	Grinnell 2003 [1893]:185	
boys	bows and arrows	N/A	N/A	Grinnell 2003 [1893]:185	
boys	mud	N/A	N/A	Grinnell 2003 [1893]:185	"made mud images of animals"
boys	N/A	N/A	N/A	Grinnell 2003 [1893]:185	
boys	willow (*Salix* spp.) branches or clay, sticks	N/A	N/A	Ewers 1958:147	
girls and boys	ground squirrel (*Spermophilus* spp.) skins, sticks, grass	N/A	N/A	Ewers 1958:147	from these items they made miniature tipis -the boys hunted and skinned the ground squirrels (*Spermophilus* spp.) the girls collected sticks for lodge poles and made the covers and bedding
boys	clay balls, willow (*Salix* spp.) sticks about 2 m long	N/A	N/A	Ewers 1958:148-149	
boys	blunt headed arrows, bows	N/A	N/A	Ewers 1958:148-149	chasing a piece of meat being pulled by one of the boys

Table A.8. Games (continued).

Activity/Task	Actor (woman/man/etc)	Materials Associated	Tools Associated	Features Associated	Reference	Comments
hunting	boys	N/A	N/A	N/A	Ewers 1958:149	winter-hunted rabbits, summer-hunted ground squirrels (*Spermophilus* spp.), caught hawk chicks
throwing contest	boys	peeled-fired willow (*Salix* spp.) sticks about 2 feet long, peg	N/A	N/A	Ewers 1958:149	
target practice	boys	bows, arrows	N/A	N/A	Ewers 1958:150	
fire game	boys	rocks, charcoal	N/A	N/A	Ewers 1958:150	Summer activity
wrestling	boys	N/A	N/A	N/A	Ewers 1958:150-151	Summer activity
spinning tops	boys	birchwood (*Betula* spp.) or stones for tops, deer (*Odocoileus* spp.) (also possibly (*Antilocapra americana*)) skin lashes, willow (*Salix* spp.) handled whip	N/A	N/A	Ewers 1958:152-153	Winter activity
bull game	boys	large hoop of sarvis berry (*Amelanchier alnifolia)* wood, rawhide webbing	N/A	N/A	Ewers 1958:157	similar to the wheel or hoop and pole game, also played by men but with a larger wheel
toys	girls and boys	twigs, sticks, bent wire, coloured yarn, bison (*Bison bison*) carpals and tarsals, boiled third phalanx, scraps of hide, grass, animal hair, cotton scraps, bison (*Bison bison)* wool	N/A	N/A	Blackfoot Gallery Committee 2001:32	
tops and whips	boys	wood tops (birch (*Betula* spp.), nails, paint), stone tops (water worn pebbles 15 cm in diameter), buckskin lashes (35 cm long)	N/A	N/A	Wissler 1911:54-55	
arrow games	boys	bows, arrows	N/A	N/A	Wissler 1911:55-56	
dart game	boys	wooden dart	N/A	N/A	Wissler 1911:56	
Shooting Arrows	boys	bows and arrows	N/A	N/A	Duvall 1904-1911:489	
Sliding Arrows	boys	long unsharpened sticks	N/A	N/A	Duvall 1904-1911:491	
Arrow Game	boys	sticks sharpened at one end and split in 3 at the other with horse (*Equus caballus*) hair attached to the split end	N/A	N/A	Duvall 1904-1911:492	
Whipping the top game	boys	stick with bark strings attached for whip, rocks	N/A	N/A	Duvall 1904-1911:493	played in winter on the ice, knock the rock tops together
Whipping the top	boys	stick with buckskin strings, birch (*Betula* spp.) wood top	N/A	N/A	Duvall 1904-1911:494	played in winter in soft snow

Table A.8. Games (continued).

Activity/Task	Actor (woman/man/etc)	Materials Associated	Tools Associated	Features Associated	Reference	Comments
giving birth	women	various root teas, red paint	projectile point (to cut the umbilical cord)	specially erected tipi	Kidd 1986:30-33	In attendance were the woman giving birth and generally 4 older women to assist. The mother stayed in this tipi for 'probably ten days'.

Table A.9. Giving Birth.

Activity/Task	Actor (woman/man/etc)	Materials Associated	Tools Associated	Features Associated	Reference	Comments
comb, braid hair and paint faces	young men	N/A	N/A	N/A	Grinnell 2003 [1893]:182	
necklaces	women	seed, berry, bead	N/A	N/A	Peacock 1992:83	

Table A.10. Grooming and adornment.

Activity/Task	Actor (woman/man/etc)	Materials Associated	Tools Associated	Features Associated	Reference	Comments
skin preparation	women	N/A	N/A	N/A	Ewers 1945a:10	Ewers noted the social unit involved as one or more wives of the household
hide processing	women/girls practice	boiled brains, marrow grease and pounded roast liver, white clay rub for whitening the hide	elk (*Cervus elaphus*) antler hafted scraper, rawhide strand	N/A	Hanna 1988:35, 117-118	
hide processing	women	fresh hide	pegs, sharpened elk (*Cervus elaphus)* bone fleshers, scraping adze like tool, rawhide rope fastened to an upright pole, whitened with a piece of fungus	N/A	McClintock 1968 [1910]:230	
preparing hides	women, children helped	N/A	N/A	N/A	Blackfoot Gallery Committee 2001:27	
skin dressing	women	brains, fat, liver, house lard, baking flour, warm water, sage (*Artemisia* spp.), rotten wood	wooden stakes or pins, fleshing tool, scraper, smooth stone, rough edged stone, loop of twisted sinew or thong, rib bone beamer	fire/smoke pit in a smoke house that looks very similar to a sweat house	Wissler 1910:63-64	
dressing hides	girls	N/A	N/A	N/A	Ewers 1958:102	taught by mothers in preparation for marriage
fleshing	women	raw hide	lodge pins, sharp toothed fleshing tool	N/A	Ewers 1945a:10	
fleshing	women		lodge pegs, sharp toothed instrument made from a bison (*Bison bison*) limb bone with a stone or metal blade	N/A	Ewers 1958:110	
fleshing hides	women	hide	L-shaped scraping tool, metal blade	N/A	HungryWolf 1982:106	
scraping	women	dried hide	sharp bladed 'adze like tool'	N/A	Ewers 1945a:10-11	
scraping	women	N/A	l-shaped Elk (*Cervus elaphus)* horn handle with stone or iron blade	N/A	Ewers 1958:110	
hair removal	women	dried hide	sharp bladed 'adze like tool' or a rock	N/A	Ewers 1945a:10-11	

Table A.11. Hideworking.

Activity/Task	Actor (woman/man/etc)	Materials Associated	Tools Associated	Features Associated	Reference	Comments
deer family (*Odocoileus* spp.) *or* (*Antilocapra americana)* hair removal	women	oiled hide	rib bone beaming tool	N/A	Ewers 1945a:12	done in order to remove fine hairs
hair removal	women		scraping tool, rock	N/A	Ewers 1958:111	
hair removal on smaller mammals	women	N/A	rib-bone beaming tool resembling a spokeshave	N/A	Ewers 1958:111	Such as elk (*Cervus elaphus*), dear (*Odocoileus* spp.), antelope (*Antilocapra americana*), and mountain sheep (*Ovis canadensis*).
making rawhide	women	fresh hide	tipi stakes, flesher, knife, scraper	N/A	HungryWolf 1982:232-233	
cutting rawhide	women	N/A	knife	N/A	Ewers 1958:111	to make various items
making rawhide rope	women	back fat	lodge pegs, knife, rock for softening, bison skull, rock for pounding in hair removal	N/A	Ewers 1958:111-112	bison (*Bison bison*) skull used to pull rope through to soften it and remove hair
softening rawhide	women	fat, liver, brains; lard, baking flour, warm water	smooth stone, rough stone, rawhide loop or sinew	N/A	HungryWolf 1982:233-235	
hide tanning	women	N/A	N/A	N/A	A. Kehoe 1995:114	
tanning	women	prepared hide	hands, smooth stone	N/A	Ewers 1945a:11	
tanning skins	women	N/A	N/A	N/A	McClintock 1968 [1910]:189	
tan robes	women	N/A	N/A	N/A	Grinnell 2003 [1893]:182	
tan robes	girls	N/A	N/A	N/A	Grinnell 2003 [1893]:185	helping the women
tan furs	girls	N/A	N/A	N/A	Grinnell 2003 [1893]:185	helping the women
tanning hides	women	N/A	N/A	N/A	Kidd 1986:41-44	girls were trained by their mothers
tanning hides	women	brains and water	stakes, scraper with elk (*Cervus elaphus)* antler handle (stone or iron bit), flesher (bone or metal), wire or rawhide rasp	N/A	Blackfoot Gallery Committee 2001:27-28	

Table A.11. Hideworking (continued).

Activity/Task	Actor (woman/man/etc)	Materials Associated	Tools Associated	Features Associated	Reference	Comments
tanning hides	women	bacon grease (previously used mashed liver and bison brain, soup and soft grass)	tipi stakes, iron scraper, stick, rough rock	N/A	Hanks 1938-1941:20	
stretching	women	tanned hide	hands and feet	N/A	Ewers 1945a:11	
softening	women	tanned and stretched hide	rough stone, rawhide loop tied to lodge pole	N/A	Ewers 1945a:11-12	
braining	women	bison brains, fat, liver, water	stone	N/A	Ewers 1958:110	
graining	women	N/A	rough stone, lodge pole	N/A	Ewers 1958:110	
smoking skins	women	prepared hide	pins to hold hides in place over frame	hole-~30 cm deep and 60 cm in diameter, large fire short distance away, framework of arched willow (*Salix* spp.) sticks (ends driven into ground)	Ewers 1945a:12	structure said to look much like a sweat lodge; Ewers noted that the debitage left behind would include: burnt sage (*Artemisia* spp.) and burnt rotten cottonwood (*Populus balsamifera*), large coals from the fire and burnt leaves
smoking prepared hides	women	tanned hide draped over structure	N/A	tipi shaped or willow dome shaped structure, inner hearth	HungryWolf 1982:238-239	
cleaning skins	women	clothing	native clay (white or yellow), selenite	N/A	Ewers 1945a:13	

Table A.11. Hideworking (continued).

Activity/Task	Actor (woman/man/etc)	Materials Associated	Tools Associated	Features Associated	Reference	Comments
procuring/ preparing lodge poles	women	N/A	N/A	N/A	McClintock 1968 [1910]:234	cut and peeled
lodge pole cutting	women	N/A	N/A	N/A	Ewers 1958:116	the women cut the poles and brought them to camp; Ewers noted this as a fall activity
lodge pole peeling	young men	N/A	knife	N/A	Ewers 1958:116	Ewers noted this as a late spring activity

Table A.12. Lodgepole making.

Activity/Task	Actor (woman/man/etc)	Materials Associated	Tools Associated	Features Associated	Reference	Comments
processing meat	women, girls	N/A	N/A	N/A	McClintock 1968 [1910]:237	cutting the meat, packing it on horses (*Equus caballus*) to camp, curing it, cooking it, making pemmican
slicing meat	women	N/A	N/A	N/A	Kidd 1986:41-44	girls were trained by their mothers
smoking meat	women	thinly sliced fresh meat, cords for hanging, green wood for smoking, salt, water, pepper	N/A	hearth, small tipi smoke-house	HungryWolf 1982:205-207, 215-216	
drying and smoking meat	women	poles, hearth	N/A	N/A	McClintock 1968 [1910]:237	McClintock observed women engaging in this activity in front of the tipi
drying meat	women	N/A	N/A	N/A	A. Kehoe 1995:114	
drying meat		N/A	N/A	drying rack (high enough to keep meat out of dogs reach)	Wissler 1910:22-24	
drying meat	women	N/A	N/A	N/A	Hanna 1988:35	
dry meat	women	N/A	N/A	N/A	Grinnell 2003 [1893]:182	
drying meat	N/A	N/A	N/A	N/A	Grinnell 2003 [1893]:205	hung in the sun', or "on lines or scaffolds in the upper part of the lodge"
drying meat	women	N/A	N/A	N/A	Ewers 1985:128	
drying meat	women	N/A	N/A	N/A	Kidd 1986:41-44	girls were trained by their mothers
drying meat	women	sliced meat, poles for hanging tripods, sage (*Artemisia* spp.), dry mint (*Mentha* spp.), rawhide containers (sootsi-maan)	N/A	hearth (sometimes)	Blackfoot Gallery Committee 2001:26-27	
drying meat	women	thinly sliced fresh meat, cords for hanging	N/A	hearth	HungryWolf 1982:205-207	
packing meat	women	N/A	N/A	N/A	Kidd 1986:41-44	girls were trained by their mothers
storing meat	women	dry meat, pemmican, dried mint (*Mentha* spp.)	N/A	N/A	HungryWolf 1982:188	

Table A.13. Meat processing.

Activity/Task	Actor (woman/man/etc)	Materials Associated	Tools Associated	Features Associated	Reference	Comments
a 'healing' ceremony	men and women	strip of white bison (*Bison bison*) robe, rattles, dried scrotum of a bison (*Bison bison*) bull filled with small pebbles, wooden tongs, bag of red paint, bag of sweet grass (*Hierochloe odorata*), string of dried bison (*Bison bison*) hoof bells, hot coals	N/A	N/A	Hanna 1988:57-58	
doctoring	man and woman	heated rocks, medicine drum, herbs, medicine sack, pot, hot coal, dried sweet pine, 'roots', bison raw hide disk, yellow paint, paint bag, medicine whistle, eagle (*Haliaeetus leucocephalus* and/or *Aquila chrysaetos*) wing	N/A	N/A	McClintock 1968 [1910]:246-250	McClintock refers to the male as the medicine man but the description indicates that both the man and the women have critical roles in the ceremony.
abortive medicines	women	*Betula occidentalis* (flowers and leaves of new birch suckers), cut-leaved anemone (*Anemone multifida*), whitlow grass (*Draba incerta*), northern or plains wormwood (*Artemisia campestris*), double bladder-pod (*Physaria didymorcarpa*)	N/A	N/A	Hellson and Gadd 1974:60-61	
childbirth assistance	women	common yarrow (*Achellea millefolium*), prairie crocus (*Anemone Patens*), blue camas (*Camassia quamash*), sweet grass (*Hierochloe odorata*), aspen (*Populus tremuloides*) bark scrapings, "cock-than", sweet cicely (*Osmorhiza Occidentalis*), club moss (*Selaginella densa*), wintergreen (*Pyrola* spp.)	N/A	N/A	Hellson and Gadd 1974:60-61	variously used to induce labour, expel afterbirth, and stop vaginal bleeding
relieve heartburn	women	skeleton-weed (*Lygodesmia juncea*)	N/A	N/A	Hellson and Gadd 1974:61	
curing bundles	women and men	eagle (*Haliaeetus leucocephalus* and/or *Aquila chrysaetos*) bone tube, sharp flint blades, bags of plant material, bags of paint, 1-2 polished pebbles, rattle or drum	N/A	N/A	Hellson and Gadd 1974:63	
medicinal plants	women and men	N/A	N/A	N/A	Hellson and Gadd 1974:65-85	Complete listing and uses in Hellson and Gadd 1974.

Table A. 14. Medicines and doctoring.

Activity/Task	Actor (woman/man/etc)	Materials Associated	Tools Associated	Features Associated	Reference	Comments
gathering	women and children	berries, roots, bulbs, tubers (camas and prairie turnip)	N/A	N/A	A. Kehoe 1995:114	to increase yield women cultivated the camas (*Camassia* spp.) beds
gathering water	women	travois, pails	N/A	N/A	McClintock 1968 [1910]:366	
carrying water	women	N/A	N/A	N/A	Grinnell 2003 [1893]:182	
carrying water	girls	N/A	N/A	N/A	Grinnell 2003 [1893]:185	helping the women
carrying water	girls	N/A	N/A	N/A	Ewers 1958:102	taught by mothers in preparation for marriage
hauling water	women	N/A	N/A	N/A	Kidd 1986:41-44	girls were trained by their mothers
hauling water	women	N/A	N/A	N/A	HungryWolf 1982:172	
carrying wood	women	N/A	N/A	N/A	Grinnell 2003 [1893]:182	
carrying wood	girls	N/A	N/A	N/A	Grinnell 2003 [1893]:185	helping the women
carrying firewood	girls	N/A	N/A	N/A	Ewers 1958:102	taught by mothers in preparation for marriage
gathering wood	women	N/A	N/A	N/A	Kidd 1986:41-44	girls were trained by their mothers
hauling wood	women	N/A	N/A	N/A	HungryWolf 1982:172	
hauling wood	women	N/A	N/A	N/A	Haig 1991:41	
wood cutting	women	N/A	commercial axe, stone maul	N/A	Wissler 1910:31	

Table A.15. Miscellaneous gathering.

Activity/Task	Actor (woman/man/etc)	Materials Associated	Tools Associated	Features Associated	Reference	Comments
cradleboard making	women	willow (*Salix* spp.) branches or sturdy boards, buckskin, beads, shells, cloth	N/A	N/A	HungryWolf 1982:248-249	
saddle making	women	boiling water, rawhide cord	rock for hair removal, scraper, knife	N/A	Ewers 1958:112	
shield making	men	bull neck rawhide, paints	knife	hearth	Ewers 1958:113	
drum making	men	horse (*Equus caballus*) belly hide, paints	N/A	hearth	Ewers 1958:113	

Table A.16. Miscellaneous manufacture.

Activity/Task	Actor (woman/man/etc)	Materials Associated	Tools Associated	Features Associated	Reference	Comments
painting	both	red earth, crushed pale reddish yellow rock, baked grey or yellowish clay, pussy willow buds, yellow earth, bison (*Bison bison*) gall stones, duck manure, coloured mud, plants growing near lakes, white earth, charcoal, black earth	small stone mortars, skin bags, clam shell cup, straight peeled willow (*Salix* spp.) stick of different lengths for rulers, flattened sticks for marking lines through pressure, bone paint brushes (porous edge of scapula or os coxae some pointed some rounded)	N/A	Ewers 1945a:14-16	paints could be mixed with the glues from boiling beaver (*Castor canadensis*) tail or white, clean hide underscrapings
geometric painting	girls	N/A	N/A	N/A	Ewers 1958:102	taught by mothers in preparation for marriage
paint making	both (not specifically stated)	coloured soils, crushed rock, baked coloured clays, pussy willow (*Salix discolor*) buds, bison (*Bison bison*) gallstones, charcoal, dried duck dung, plants growing near lakes, buckskin sacks, boiled beaver (*Castor canadensis*) tail or the underscraping of a hide	small stone mortars	N/A	Ewers 1958:114	
coloured paints	N/A	burnt clays of red, brown, yellow, and white, grease	N/A	hearth	Grinnell 2003 [1893]:203	
black paint	N/A	charred wood	N/A	hearth	Grinnell 2003 [1893]:203	
paint brushes	both (not specifically stated)	porous bone from the scapula or os coxae	N/A	N/A	Ewers 1958:114	"As a general rule women painted only geometric designs on rawhide cases, buffalo robes, and lodge linings. Men painted human or animal forms on their shields, drums, and lodge covers, and they recorded their successes at war on the inner surfaces of their buffalo robes."
painting tipi cover	men	porous bone from the scapula or os coxae plus bison (*Bison bison*) tail for paint brush over large areas	N/A	N/A	Ewers 1958:114-115	animal designs
tipi cover painting	men	N/A	N/A	N/A	Kidd 1986:121	
painting tipi cover	men	N/A	N/A	N/A	Hanks 1938-1941:22	

Table A.17. Painting.

Activity/Task	Actor (woman/man/etc)	Materials Associated	Tools Associated	Features Associated	Reference	Comments
tipi liner painting	women	N/A	N/A	N/A	Ewers 1958:116	geometric designs
painting on men's clothing	men	N/A	N/A	N/A	Ewers 1958:118	
painting clothes and containers	women	N/A	N/A	N/A	Blackfoot Gallery Committee 2001:28	
painting ceremonial bags	women	N/A	N/A	N/A	Kidd 1986:41-44	girls were trained by their mothers
face paints	women and men	ochre, rendered fat	N/A	N/A	Blackfoot Gallery Committee 2001:37	

Table A.17. Painting (continued).

Activity/Task	Actor (woman/man/etc)	Materials Associated	Tools Associated	Features Associated	Reference	Comments
pemmican meat processing	N/A	N/A	metate/hafted maul	N/A	Wissler 1910:22-23	
making pemmican	women	meat, cherries	N/A	N/A	McClintock 1968 [1910]:237-238	
pemmican making	women	dried meat, dry hide, sticks for pounding dried cooked meat, bison (*Bison bison*) fat, kettle for melting fat, pemmican bags, wood spade, sometimes dried berries	N/A	2 large fires	Grinnell 2003 [1893]:206-207	
making pemmican	women	N/A	N/A	N/A	Ewers 1985:128	
making pemmican	women	dried meat, quaking aspen (*Populus tremuloides*) wood, dry hide, sticks, fat, pemmican bags, 'wooden spade' (citing Grinnell 2003 [1893]:206-207)	N/A	2 hearths	Kidd 1986:41-44, 108-109	girls were trained by their mothers
pemmican (moki-maani) making	women	dry meat, dry berries, fat	stone maul lashed to a willow (*Salix* spp.) handle, flat rock grinding stone	N/A	Blackfoot Gallery Committee 2001:26-27	

Table A.18. Pemmican Making.

Activity/Task	Actor (woman/man/etc)	Materials Associated	Tools Associated	Features Associated	Reference	Comments
tobacco pipe making	men	hollow tube of clay or stone, short straight wooden stem, greyish calcareous shale, animal fat, rose wood (*Rosa* spp.), willow (*Salix* spp.) or ash (*Fraxinus* spp.) for pipe stem, sinew	metal tool ~15cm long for drilling ('like a screwdriver", and another "like a drill"), file, knife, sandstone for smoothing, skin or rag for polishing, stone knife, hot wire to burn hole through stem	fire of 'green buck-brush' (*Symphoricarpus occidentalis*) to blacken the pipe	Ewers 1945a:56-58	
pipe making	men	greyish, calcareous shale, animal fat, skin or rag for polishing, ash (*Fraxinus* spp.) wood for pipe stems, heated iron rod	sharp metal, drill, reamer, file, knife, sand rock	hearth	Ewers 1958:120-121	doesn't say who made women's pipes
pipe making	men, sometimes women	pipe stone, 'jointed water grass' or horse tail (*Equiestum arvense)* to smooth the finished pipe, tallow, sage (*Artemisia* spp.), buckbrush (*Symphoricarpus occidentalis),* cottonwood (*Populus balsamifera)* buds	nail, butcher knife, file, sharp hoop iron, sandrock, pencil, vice, hacksaw, commercial sandpaper, cloth, screwdriver	hole 10-13 cm deep and 13 cm in diameter to burn the sage (*Artemisia* spp.) or buck-brush (*Symphoricarpus occidentalis*) and hold the pipe bowl over	Ewers 1963:46-52	
pipestem making	men	red willow (*Salix* spp.) or wild rosewood (*Rosa* spp.), sinew, ash (*Fraxinus* spp.) stem	knife, iron rod	N/A	Ewers 1963:56-57	

Table A.19. Pipe making.

Activity/Task	Actor (woman/man/etc)	Materials Associated	Tools Associated	Features Associated	Reference	Comments
plant gathering	women	N/A	N/A	N/A	McClintock 1968 [1910]:363-364	medicinal herbs, edible plants, perfume plants, ceremonial plants
plant gathering	women	N/A	containers, digging sticks, knife	N/A	Peacock 1992:47-52, 70-71	not clear if medicine men collect, process, and dry plants or if their wives do that, Peacock noted this as a Spring to Fall activity
digging tubers	women	N/A	digging stick	N/A	A. Kehoe 1995:117	
edible root gathering		N/A	digging stick	N/A	Wissler 1910:22	
gathering roots	women	digging stick	N/A	N/A	Hellson and Gadd 1974:94	
camas (*Camassia* spp.) root	women	hot fire, grass, camas bulbs (*Camassia* spp.) , twigs, earth, fire	N/A	roasting pit lined with flat stones	Grinnell 2003 [1893]:204	
bitter-root	women	N/A	N/A	N/A	Grinnell 2003 [1893]:204	
Prairie turnip (*Psoralea esculenta)*	women	N/A	N/A	N/A	Grinnell 2003 [1893]:204-205	
digging bulbs	women	N/A	N/A	N/A	Ewers 1958:90	Ewers noted this as a late Spring activity
digging roots	girls	N/A	N/A	N/A	Ewers 1958:102	taught by mothers in preparation for marriage
gathering wild roots	women	N/A	N/A	N/A	Kidd 1986:41-44	girls were trained by their mothers
gathering roots	women and children	digging stick	N/A	N/A	Thwaites 1906:109	
root digging	women and girls	digging stick	N/A	N/A	Grinnell 1913:203	
Women's sage (*Artemisia frigida)*	women		N/A	N/A	HungryWolf 1982:203	
Men's Sage (*Artiemisia Ludoviciana*)	men		N/A	N/A	Hellson and Gadd 1974:24	Hellson states that this is the only sage used in the sweat lodge but it is unclear whether or not women also used it or used their own. Peacock (1992:139) refers to it as man sage.
processing plants	women	boiling rocks, hide or canvas	mano (or maul) and metate	hearth (roasting, boiling), roasting pit, boiling pit	Peacock 1992:52-59, 71-74	not clear if medicine men also collect, process, and dry plants or if their wives do that; Peacock noted this as a Spring to Fall activity
drying plants	women	N/A	N/A	N/A	Peacock 1992:56-59, 71-74	in the sun, not clear if medicine men collect, process, and dry plants or if their wives do that; Peacock noted this as a Spring to Fall activity
seasonings	women	roots, leaves, hide pouches	N/A	N/A	Hellson and Gadd 1974:98-99	dried and pulverized

Table A.20. Plant/root gathering and processing.

Activity/Task	Actor (woman/man/etc)	Materials Associated	Tools Associated	Features Associated	Reference	Comments
pottery making	women (men made ceremonial vessels?)	wet sticky clay, temper of sand or pulverized rock, rawhide or sinew handle	N/A	tripod for hanging cooking vessel over fire	Ewers 1945a:55-56	not known to Ewers as replaced by metal trade kettles at 'an early date', shaped with hands or "molded inside or around a stiff rawhide mold" (p.56), cylindrical cooking vessels, flat serving dishes, straight sided ceremonial serving beaker
pottery making	women	flat stone, clay, crushed red rock, crushed sandstone or river sand, grease	hammerstone, elk (*Cervus elaphus*) horn for shaping	hole mould dug in ground, fire over hole	Ewers 1945b:293-295; 1968:10-11	
pottery making	men-ceremonial	clay, crushed sandstone, rawhide mould, 'red earth paint', raw hide bag large enough to hold the pot to hang inside tipi	smoothing stone	fire	Ewers 1945b:294	flat bottomed with straight sides held dried meat and pemmican for ceremonial feasts
pottery making	N/A	hide bag filled with sand, raw hide handle, clay, crushed rock	N/A	N/A	Wissler 1910:26	clay molded around the bag and sand removed when dry, fire heated to strengthen
pottery making	women and men	ash, sand, crushed shells	N/A	N/A	Hungry-Wolf 1982:249	dried in the sunlight
stone bowls and kettles	N/A	hard clayey rock, denser stone from grinding into shape	N/A	N/A	Grinnell 2003 [1893]:202	

Table A.21. Pottery making.

Activity/Task	Actor (woman/man/etc)	Materials Associated	Tools Associated	Features Associated	Reference	Comments
quillwork	women	porcupine (*Erethizon dorsatum*) quills, plants for dyes, buckskin to hold dye and quills to be dyed, long cigar shaped bladder containers to store dyed quills, sinew thread	bone or metal awl, bone or horn implement for pressing and flattening the quills after attachment	N/A	Ewers 1945a:28-29	Ewers noted that the basal tip of each utilized quill was discarded in manufacture, quills were wrapped in buckskin with water and plant dye and placed under a woman's bed for a few days-the dye pressed into the quills by her weight
porcupine (*Erethizon dorsatum*) quillwork	girls	N/A	N/A	N/A	Ewers 1958:102	taught by mothers in preparation for marriage
quillwork	women	porcupine (*Erethizon dorsatum*) quills, plant dye of various colors, water, buckskin wrapping, elk (*Cervus canadensis*) bladder containers, sinew thread	awl, bison (*Bison bison*) horn implement to flatten sewn down quills	N/A	Ewers 1958:119-120	
quillwork	women	N/A	N/A	N/A	Kidd 1986:82	girls were trained by their mothers
quillwork	women	porcupine (*Erethizon dorsatum*) quills, plant dyes, coloured cloth for dyes, sinew, tanned hide, smooth object to flatten sewn quills	awl	N/A	HungryWolf 1982:240-243	
quillwork	women	porcupine (*Erethizon dorsatum*) quills	N/A	N/A	Thwaites 1906:104	
quill and beadwork	women	coloured quills, sinew, thread	N/A	N/A	Wissler 1910:55-63	"As yet, practically no woven beadwork is to be found among these people, though it is rapidly spreading over the area." (Wissler 1910:63)
quill and beadwork	women	quills, beads, dentalium, cowrie shells, ribbons, cloth, metal ornaments	N/A	N/A	Blackfoot Gallery Committee 2001:28-30	
beadwork	girls	N/A	N/A	N/A	Ewers 1958:102	taught by mothers in preparation for marriage

Table A.22. Quillwork and beadwork.

Activity/Task	Actor (woman/man/etc)	Materials Associated	Tools Associated	Features Associated	Reference	Comments
beadwork	women	rosehips (*Rosa* spp.), fish vertebrae, silverberries (*Elaeagnus commutata*), a sweet smelling root, shells, bear (*Ursus* spp.) and eagle (*Haliaeetus leucocephalus* and/or *Aquila chrysaetos*) claws, bison (*Bison bison*) elk (*Cervus elaphus*) or horse (*Equus caballus*) teeth, buckskin cord, trade beads, sinew, commercial tread, metal needles	N/A	N/A	Ewers 1945a:32-36	
beadwork	women	N/A	N/A	N/A	Ewers 1958:120	similar method to quillwork without the preparation
beadwork	women	thread, beads	N/A	N/A	HungryWolf 1982:243-246	
making dyes	women	yellow-lemon coloured moss from the Rocky Mountains, red from 'a certain root', other colours from goods bought from the whites	N/A	N/A	Thwaites 1906:103-104	

Table A.22. Quillwork and beadwork (continued).

Activity/Task	Actor (woman/man/etc)	Materials Associated	Tools Associated	Features Associated	Reference	Comments
setting up camp	women	arranging lodges, caring for medicine bundles, bringing in wood and water, preparing evening meal	N/A	N/A	McClintock 1968 [1910]:225	
setting up tipi	women	lodge poles, cover, 'pins' (to hold hide together), pegs, ladder	N/A	N/A	HungryWolf 1982:113	
setting up/taking down a tipi	women	lodge poles, cover, front wooden pins, pegs	N/A	stone lined circular hearth	McClintock 1968 [1910]:233-235	
packing up camp	women	N/A	N/A	N/A	Ewers 1985:130-131	

Table A.23. Setting up and packing up camp.

Activity/Task	Actor (woman/man/etc)	Materials Associated	Tools Associated	Features Associated	Reference	Comments
sewing skins	women	animal sinew for thread	bone awl	N/A	Ewers 1945a:13-14	
sewing skins	N/A	N/A	bone awl replaced with metal awl replaced with needle	N/A	Wissler 1910:54	
sewing	women	sinew	bone awl, knife	N/A	HungryWolf 1982:239-240	
parfleche making	women	bison (*Bison bison*) or domestic cow (*Bos* spp.) hide, paints	flesher, scraper, knife	N/A	Wissler 1910:79-81	
making parfleches	women	N/A	N/A	N/A	McClintock 1968 [1910]:231	rawhide cases
parfleche making	women	water, pegs, paints, beaver (*Castor canadensis*) tail fat or bison (*Bison bison*) fat in paint	peeled willow (*Salix* spp.) sticks for measuring, hide scraper or rock, knife	N/A	Ewers 1958:112-113	
bags and sacks	N/A	parfleche	N/A	N/A	Grinnell 2003 [1893]:203	
rawhide containers	women	paint, rawhide fringes	N/A	N/A	Ewers 1958:113	
sewing clothes and containers	women	sinew	bone awl, awl case	N/A	Blackfoot Gallery Committee 2001:28	
making cloths	women	N/A	N/A	N/A	McClintock 1968 [1910]:189	
making clothing	girls	N/A	N/A	N/A	Ewers 1958:102	taught by mothers in preparation for marriage
making clothing	women	rawhide of various animals, quillwork and beadwork, weasel (*Mustelidae*) skin pendants, elk (*Cervus elaphus*) teeth	N/A	N/A	Ewers 1958:117-119	
making clothing	women	bison (*Bison bison*) or antelope (*Antilocapra americana*) skin, weasel (*Mustelidae*) and ermine (*Mustela erminea*) tails, quills, beads, silverberry (*Elaeagnus commutata*) seeds, elk (*Cervus elaphus*) teeth, paints	N/A	N/A	Kidd 1986:41-44, 74-75	girls were trained by their mothers
making clothing	women	hides of deer (*Odocoileus* spp.), antelope (*Antilocapra americana*), elk (*Cervus elaphus*), bison (*Bison bison*), cow (*Bos* spp.), cloth, blankets, paints, quills, beads	N/A	N/A	HungryWolf 1982:216-220	
dress making	women	hides of deer (*Odocoileus* spp.), beads, trade cloth, shells, animal teeth, thimbles, cowrie shells, elk (*Cervus elaphus*) teeth	N/A	N/A	HungryWolf 1982:227-231	
making moccasins	women	N/A	N/A	N/A	Hanna 1988:35	
sew moccasins	women	N/A	N/A	N/A	Grinnell 2003 [1893]:182	
sewed moccasins	girls	N/A	N/A	N/A	Grinnell 2003 [1893]:185	helping the women
making moccasins	women	moose (*Alces alces*) hide, bison (*Bison bison*) hide, beads, quills	N/A	N/A	Kidd 1986:41-44, 75-76	girls were trained by their mothers
moccasin making	women	hides of sheep, elk, moose, deer; sinew, awls, thread, beads, quills	N/A	N/A	HungryWolf 1982:220-227	

Table A.24. Sewing.

Activity/Task	Actor (woman/man/etc)	Materials Associated	Tools Associated	Features Associated	Reference	Comments
sweat-house	the people	N/A	N/A	N/A	Grinnell 1901:659	
sweat lodge	men	1 m high by 2 m in diameter, willows (*Salix* spp.), cow (*Bos* spp.) skins	N/A	hole in centre for hot rocks	Hanna 1988:65-66	women never enter the sweat lodge
sweat lodge	men and women	water birch (*Betula occidentalis*), willows (*Salix* spp.) (ends sharpened to a point, skin robes or blankets, hot stones, sage (*Artiemisia Ludoviciana*)	N/A	interior hearth	Hellson and Gadd 1974:17-24	Hellson states that this is the only sage used in the sweat lodge but it is unclear whether or not women also used it or used their own.
sweat lodge	men	100 willow (*Salix* spp.) branches, 100 hand sized stones, red and black paint, blankets and robes to cover the outside of the structure, bison (*Bison bison*) skull, soyotoiyis (*Carex Nebraskensis praevia)* grass, sweet grass (*Hierochloe odorata*)	N/A	hearth (outside of structure), hole inside for the heated stones	McClintock 1968 [1910]:284-290	This was a Sundance sweat lodge and the woman sponsor and the last years woman Sundance sponsor both prayed outside the lodge. The door always faces east.

Table A.25. Sweat lodges.

Activity/Task	Actor (woman/man/etc)	Materials Associated	Tools Associated	Features Associated	Reference	Comments
tipi cover making	women	N/A	N/A	N/A	A. Kehoe 1995:114	
tipi cover making	women	bison (*Bison bison*) hides, sinew, 15-20 pins to close front border	awls	N/A	Grinnell 1901:651-654	Grinnell noted that the women of the camp would engage in this activity collectively
making tipi covers	women	N/A	N/A	N/A	McClintock 1968 [1910]:189	
tipi cover making	women	N/A	N/A	N/A	McClintock 1968 [1910]:232	McClintock noted that the social unit engaged in this activity were groups of women, ". . . Gossiping, smoking, and eating while at their work. . ."
tipi cover making	women	6-20 bison (*Bison bison*) hides, sinew thread	N/A	N/A	Ewers 1958:115	
making tipis	women	N/A	N/A	N/A	Kidd 1986:41-44	girls were trained by their mothers
tipi cover making	women	bison (*Bison bison*) hides	N/A	N/A	Kidd 1986:119	
tipi cover making	women	sewing machine, canvas or hides, sinew	scissors, knife, awl	N/A	HungryWolf 1982:122	
tipi cover making	group of women	food, twists of sinew, cut hides	knife, awl	N/A	Hanks 1938-1941:2, 19-20	
make lodges	girls	N/A	N/A	N/A	Grinnell 2003 [1893]:185	helping the women
tipi cover repair	women	N/A	N/A	N/A	Grinnell 1901:651	
smoking the tipi cover	women	fire, sagebrush (*Artemisia* spp.)	N/A	N/A	Grinnell 1901:653	Grinnell noted that the women of the camp would engage in this activity collectively

Table A.26. Tipi cover making.

Activity/Task	Actor (woman/man/etc)	Materials Associated	Tools Associated	Features Associated	Reference	Comments
knives	N/A	stone, wood handle	N/A	N/A	Grinnell 2003 [1893]:200	some long some short
scrapers	N/A	stone	N/A	N/A	Grinnell 2003 [1893]:200	
awl making	women	small bison (*Bison bison*) buffalo or moose (*Alces alces*) tarsal or sturdy bird bones	N/A	N/A	Kidd 1986:41-44	
mauls	N/A	stone, wood handle, hide covering	N/A	N/A	Grinnell 2003 [1893]:200	
mauls	women	oval stone with pecked groove along shortest diameter, green stick handle, sinew, rawhide	N/A	N/A	Grinnell 1913:200-201	used as axe to chop wood, hammer for tent pegs, kill disabled animals, break heavy bone for marrow
root digger	N/A	wooden stick ~60 cm long with a sharpened point	N/A	N/A	McClintock 1968 [1910]:87	

Table A.27. Tool making.

Activity/Task	Actor (woman/man/etc)	Materials Associated	Tools Associated	Features Associated	Reference	Comments
make travois	girls	N/A	N/A	N/A	Grinnell 2003 [1893]:185	helping the women
making travois	women	N/A	N/A	N/A	Kidd 1986:41-44	girls were trained by their mothers

Table A.28. Travois Making.

Activity/Task	Actor (woman/man/etc)	Materials Associated	Tools Associated	Features Associated	Reference	Comments
wooden bowl making	both	aspen (*Populus tremuloides*), poplar (*Populus balsamifera*), ash (*Fraxinus* spp.) or cottonwood (*Populus* spp.) knots, animal fat	axe, skin scraper, sandstone rock, knife	N/A	Ewers 1945a:58-59; Wissler 1910:28	smaller knots used to make cups
buckets, cups, basins, dishes	N/A	bison (*Bison bison*) stomach lining, flattened willow (*Salix* spp.) or cherry (*Prunus* spp.) hoop, rawhide	N/A	N/A	Grinnell 2003 [1893]:201	
basins and flat dishes	N/A	split bison (*Bison bison*) or mountain sheep (*Ovis canadensis*) horn	N/A	N/A	Grinnell 2003 [1893]:203	
wooden bowls and dishes	N/A	tree knots and protuberances, knife	N/A	hearth	Grinnell 2003 [1893]:203	
wooden bowls and dishes	women	knots in ash (*Fraxinus* spp.) or cottonwood (*Populus* spp.) trees, grease	axe, scraper, sand rock, knife	N/A	Ewers 1958:121-122	items made - bowls, dishes, and drinking cups
bowl making	women and men	large knots or burls in tree	N/A	N/A	HungryWolf 1982:249	
dipper and small bowl making	women and men	bison (*Bison bison*) and mountain sheep (*Ovis canadensis*) horns	N/A	N/A	HungryWolf 1982:249	
horn spoon making	both	big horn sheep (*Ovis canadensis*) or bison (*Bison bison*) horn, skin to wrap and hold shape, 'grease'	knife, rocks to shape, sandstone rock	fire to remove 'gluey matter', boiling water pit or pot to soften	Ewers 1945a:59; Wissler 1910:29-30	also made cups, dishes, and ladles from horn
spoons	N/A	wood, bone or horn	N/A	N/A	Wissler 1910:28	
ladles and spoons	N/A	wood, bison (*Bison bison*) and mountain sheep (*Ovis canadensis*) horn	N/A	N/A	Grinnell 2003 [1893]:202-203	
horn utensils	women and men	bison (*Bison bison*) or mountain sheep (*Ovis canadensis*) horn, stone, skin or cloth, sand rock, animal fat	N/A	hearth	Ewers 1958:121	items made - spoons, cups, ladles
spoons	N/A	clam shells	N/A	N/A	Kidd 1986:117	

Table A.29. Utensil and dish making.

Activity/Task	Actor (woman/man/etc)	Materials Associated	Tools Associated	Features Associated	Reference	Comments
making weapons	men	N/A	N/A	N/A	Kidd 1986:40	
arrow shaft making	N/A	N/A	two grooved stones 'of well known type', wrench made from bison (*Bison bison*) thoracic spine (hole in spine to work shaft), spokeshave (hafted or unhafted), scrap iron saws for notched end	N/A	Wissler 1910:83-84	
arrow shaft making	men? (not specifically stated)	sarvis berry (*Amelanchier alnifolia*) wood	stone straightener, rib or flat bone with a hole in the centre	N/A	Grinnell 2003 [1893]:200	
arrow shaft making	men	sarvis berry (*Amelanchier alnifolia*) branch, eagle (*Haliaeetus leucocephalus* and/or *Aquila chrysaetos*), hawk, crow (*Corvus brachyrhynchos*) or goose feathers, sinew, boiled bison (Bison bison) phallus glue	N/A	N/A	Ewers 1958:122	
arrow shaft making	men	straight service berry (*Amelanchier alnifolia*) or cherry (*Prunus* spp.) shoots, 3 feathers, glue (boiled rawhide),	grooved piece of sandstone, 'wrench'-hole drilled in a rib of mountain sheep (*Ovis canadensis*) horn	N/A	Grinnell 1913:201-202	Grinnell noted that men usually engaged in this activity in middle life (that is the men in their prime, the hunters)
arrow heads	men? (not specifically stated)	N/A	N/A	N/A	Grinnell 2003 [1893]:200	"barbed slender points for war, and barbless for hunting."
arrow making	men	iron barrel hoop	axe, chisel	N/A	Ewers 1958:122	
arrow heads	men	stone, bone, or horn; glue; sinew	stone hammer, core, bone or horn flaker, bone and horn sharpened by rubbing on a stone	N/A	Grinnell 1913:202-203	
bows	men? (not specifically stated)	ash (*Fraxinus* spp.) wood or choke cherry tree (*Prunus virginiana*) or hazel wood	N/A	N/A	Grinnell 2003 [1893]:199-200	

Table A.30. Weapon making.

Activity/Task	Actor (woman/man/etc)	Materials Associated	Tools Associated	Features Associated	Reference	Comments
bow making	men	choke cherry (*Prunus virginiana*) branch, wooden pegs, sinew, bison (*Bison bison*) phallus glue, rattlesnake (*Crotalus viridis*) skin optional, buckskin cord optional	knife	N/A	Ewers 1958:122-123	
bow making	men	sinew, 1 m long 'stick'	N/A	N/A	Grinnell 1913:201	
making miniature bows and arrows	boys	N/A	N/A	N/A	Ewers 1958:103	taught by fathers in preparation for becoming men
war clubs	N/A	stone, wood handle, hide covering	N/A	N/A	Grinnell 2003 [1893]:200	
war clubs	men	oval stone with pecked groove along shortest diameter, green stick handle, sinew, rawhide	N/A	N/A	Grinnell 1913:200-201	lighter than mauls with a longer handle

Table A.30. Weapon making (continued).

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APPENDIX B

DOORWAY CRITERIA TABLES

	Yes	No	Comments/Direction
1) Doorway Gap	Y		East/Southeast
2) Heavy Loading of Cobbles Away From Perceived Doorway	Y		West
3) Long Axis = Doorway Axis	Y		
4) Hearth Centrally Located	Y		
5) Geographic Features Obstruct Doorway		N	Site most exposed to North and West
6) Campsite Features Obstruct Doorway		N	
7) Artifact Flow Indicating Flow from Doorway			N/A
8) Principle Investigator Impressions	Y		No explicitly obvious doorway
Assignment of Doorway			East/Southeast

Table B.1. Doorway Location Criteria for EbPi-51 Stone Circle 2

	Yes	No	Comments/Direction
1) Doorway Gap	Y		Southeast
2) Heavy Loading of Cobbles Away From Perceived Doorway	Y		Northwest
3) Long Axis = Doorway Axis	Y		
4) Hearth Centrally Located	Y		
5) Geographic Features Obstruct Doorway		N	Site most exposed to North and West
6) Campsite Features Obstruct Doorway		N	
7) Artifact Flow Indicating Flow from Doorway			N/A
8) Principle Investigator Impressions	Y		No explicitly obvious doorway
Assignment of Doorway			Southeast

Table B.2. Doorway Location Criteria for EbPi-51 Stone Circle 4

	Yes	No	Comments/Direction
1) Doorway Gap	Y		Southeast
2) Heavy Loading of Cobbles Away From Perceived Doorway	Y		
3) Long Axis = Doorway Axis	Y		Feature only slightly ovate
4) Hearth Centrally Located		N	Toward rear
5) Geographic Features Obstruct Doorway		N	Site most exposed to North and West
6) Campsite Features Obstruct Doorway		N	
7) Artifact Flow Indicating Flow from Doorway			N/A
8) Principle Investigator Impressions	Y		Southeast
Assignment of Doorway			Southeast

Table B.3. Doorway Location Criteria for EbPi-51 Stone Circle 8

	Yes	No	Comments/Direction
1) Doorway Gap	Y		South
2) Heavy Loading of Cobbles Away From Perceived Doorway	Y		
3) Long Axis = Doorway Axis	Y		Feature somewhat scattered
4) Hearth Centrally Located			N/A
5) Geographic Features Obstruct Doorway		N	An east door would exit into the slope, a south door allows for maximum light entry (Landals and Tischer 2001:94)
6) Campsite Features Obstruct Doorway		N	
7) Artifact Flow Indicating Flow from Doorway	Y		Additional exterior excavation completed
8) Principle Investigator Impressions	Y		No explicitly obvious doorway
Assignment of Doorway			South

Table B.4. Doorway Location Criteria for EbPi-52 Stone Circle 8

	Yes	No	Comments/Direction
1) Doorway Gap	Y		Southwest
2) Heavy Loading of Cobbles Away From Perceived Doorway		N	
3) Long Axis = Doorway Axis	Y		
4) Hearth Centrally Located			N/A
5) Geographic Features Obstruct Doorway		N	East or Southeast door would be against slope
6) Campsite Features Obstruct Doorway		N	
7) Artifact Flow Indicating Flow from Doorway			N/A
8) Principle Investigator Impressions	Y		South or Southwest to face creek (Landals and Tischer 2001:109)
Assignment of Doorway			Southwest

Table B.5. Doorway Location Criteria for EbPi-53 Stone Circle 1

	Yes	No	Comments/Direction
1) Doorway Gap		N	
2) Heavy Loading of Cobbles Away From Perceived Doorway		N	
3) Long Axis = Doorway Axis			Feature extremely scattered
4) Hearth Centrally Located			N/A
5) Geographic Features Obstruct Doorway		N	East would be against slope
6) Campsite Features Obstruct Doorway		N	West is towards the creek
7) Artifact Flow Indicating Flow from Doorway			N/A
8) Principle Investigator Impressions	Y		South or West
Assignment of Doorway			West

Table B. 6. Doorway Location Criteria for EbPi-53 Stone Circle 6

	Yes	No	Comments/Direction
1) Doorway Gap	Y		Southeast
2) Heavy Loading of Cobbles Away From Perceived Doorway		N	Extremely dense loading of cobbles, second gap in Northwest
3) Long Axis = Doorway Axis	Y		
4) Hearth Centrally Located		N	Toward Front
5) Geographic Features Obstruct Doorway		N	North is the least sheltered portion of the site
6) Campsite Features Obstruct Doorway		N	
7) Artifact Flow Indicating Flow from Doorway			N/A
8) Principle Investigator Impressions	Y		Southeast
Assignment of Doorway			Southeast

Table B.7. Doorway Location Criteria for EbPi-61 Stone Circle 1

	Yes	No	Comments/Direction
1) Doorway Gap	Y		South/Southeast
2) Heavy Loading of Cobbles Away From Perceived Doorway		N	Feature contains clusters of rocks, which are lightest in the South/Southeast and the North/Northwest
3) Long Axis = Doorway Axis		N	
4) Hearth Centrally Located	Y		
5) Geographic Features Obstruct Doorway		N	
6) Campsite Features Obstruct Doorway		N	Stone features and Stone circles all around it
7) Artifact Flow Indicating Flow from Doorway			N/A
8) Principle Investigator Impressions	Y		Southeast
Assignment of Doorway			Southeast

Table B.8. Doorway Location Criteria for EbPi-75 Stone Circle 4

	Yes	No	Comments/Direction
1) Doorway Gap	Y		Southeast
2) Heavy Loading of Cobbles Away From Perceived Doorway	Y		Feature only somewhat ovate
3) Long Axis = Doorway Axis	Y		
4) Hearth Centrally Located		N	Two possible hearths, one central and one larger on near the door
5) Geographic Features Obstruct Doorway		N	
6) Campsite Features Obstruct Doorway		N	Stone features and Stone circles all around it
7) Artifact Flow Indicating Flow from Doorway			N/A
8) Principle Investigator Impressions	Y		Southeast
Assignment of Doorway			Southeast

Table B.9. Doorway Location Criteria for EbPi-75 Stone Circle 5

	Yes	No	Comments/Direction
1) Doorway Gap	Y		Northeast
2) Heavy Loading of Cobbles Away From Perceived Doorway	Y		Densest to Southwest
3) Long Axis = Doorway Axis		N	Southeast-Northwest longer
4) Hearth Centrally Located	Y		
5) Geographic Features Obstruct Doorway		N	Northeast is towards the creek
6) Campsite Features Obstruct Doorway		N	
7) Artifact Flow Indicating Flow from Doorway			N/A
8) Principle Investigator Impressions	Y		Northeast
Assignment of Doorway			Northeast

Table B.10. Doorway Location Criteria for EbPi-75 Stone Circle 9

APPENDIX C

DISTRIBUTION MAPS

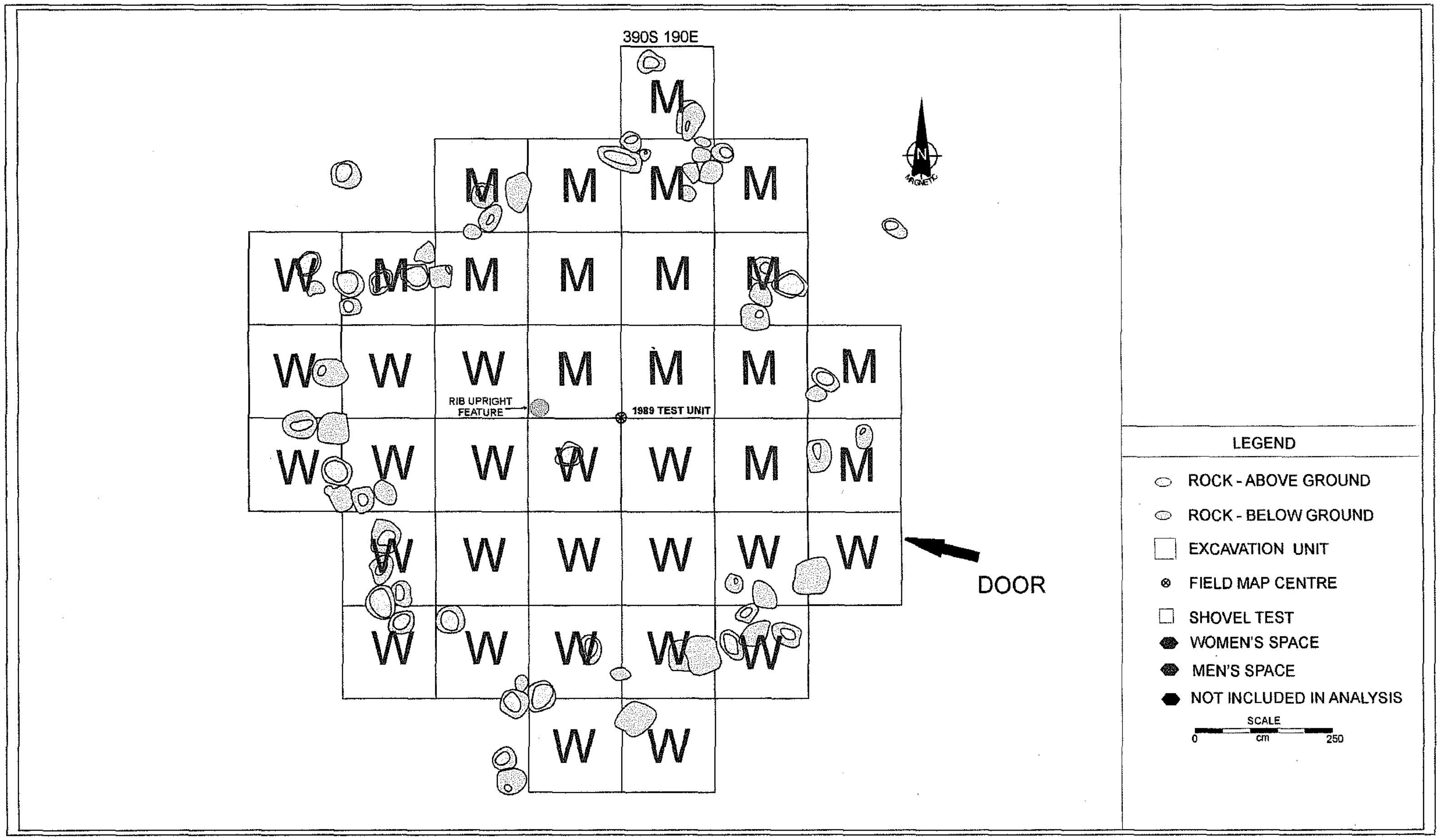

Figure C.1. EbPi-51 Stone Circle 2, Distribution of Gender.

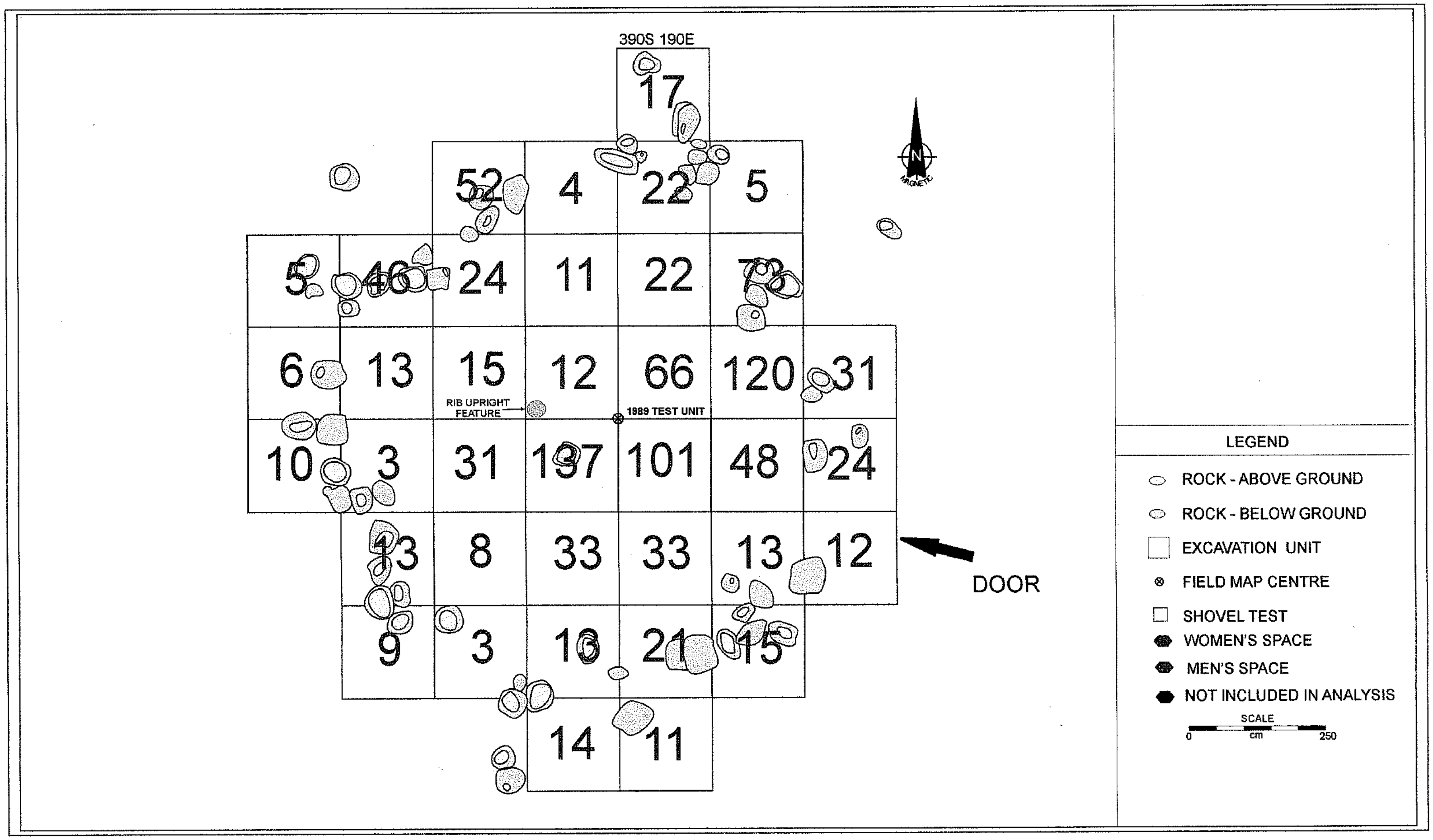

Figure C.2. EbPi-51 Stone Circle 2, Distribution of Faunal Material by Gender.

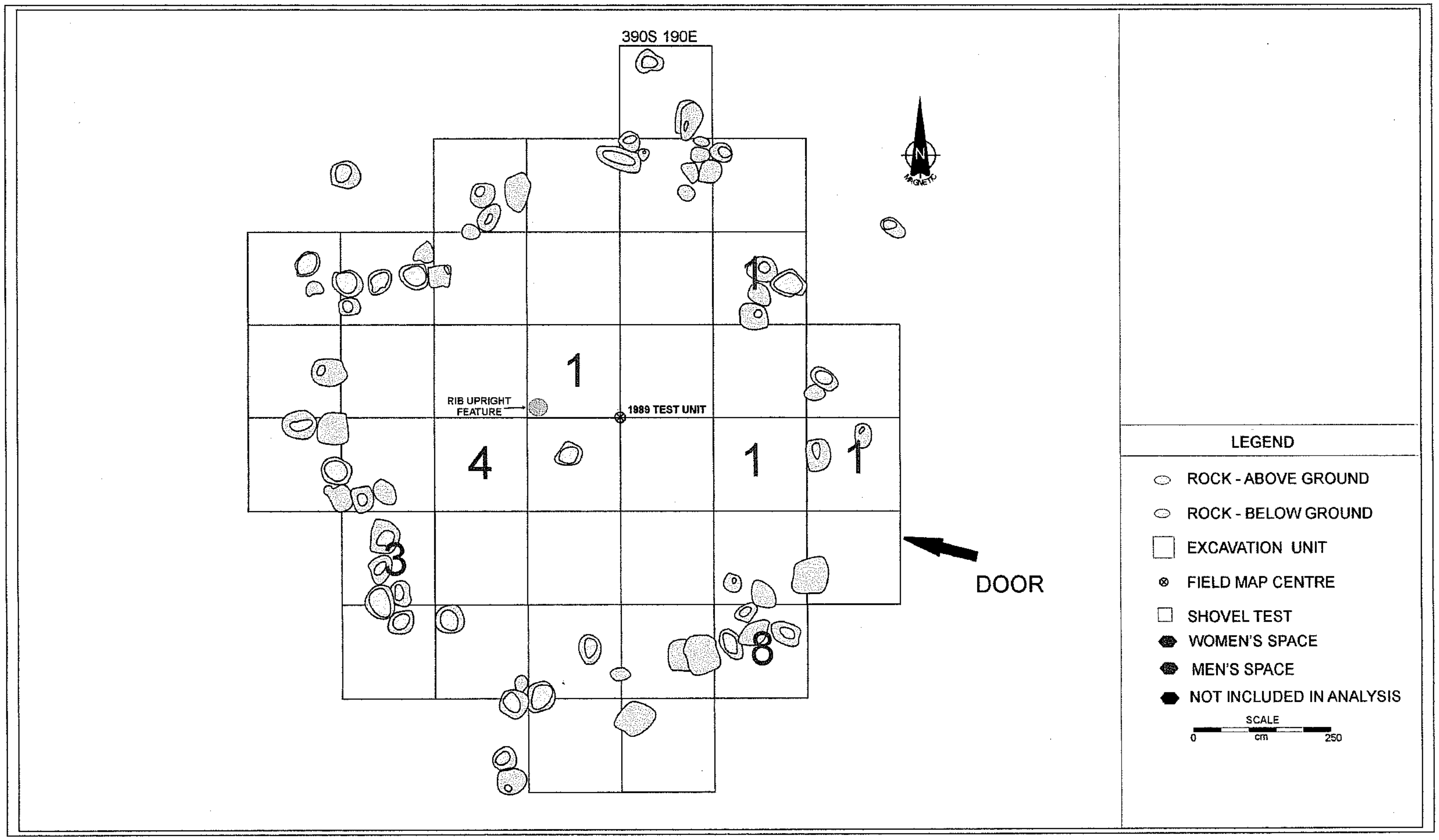

Figure C.3. EbPi-51 Stone Circle 2, Distribution of FBR by Gender.

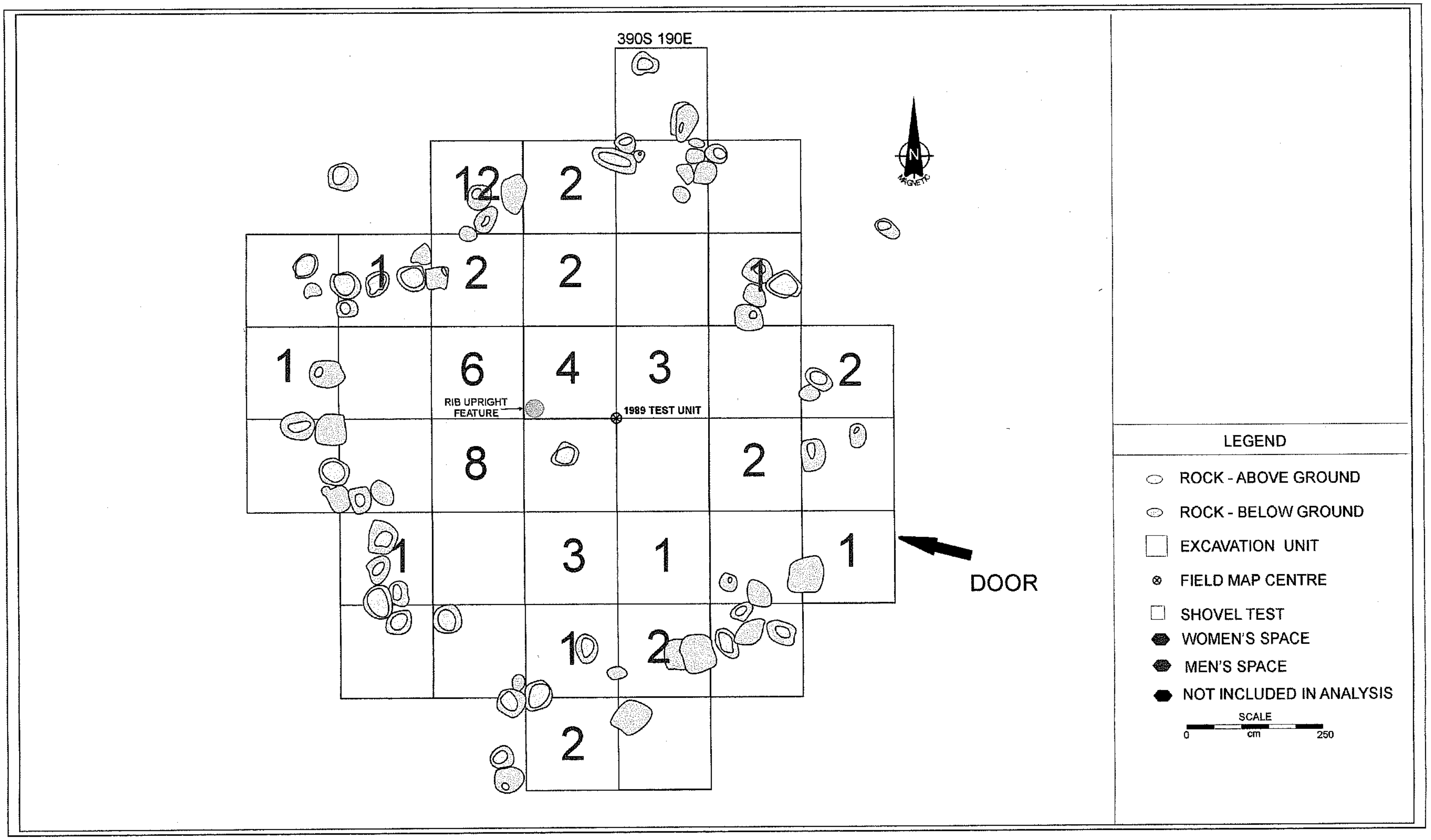

Figure C.4. EbPi-51 Stone Circle 2, Distribution of Lithics by Gender.

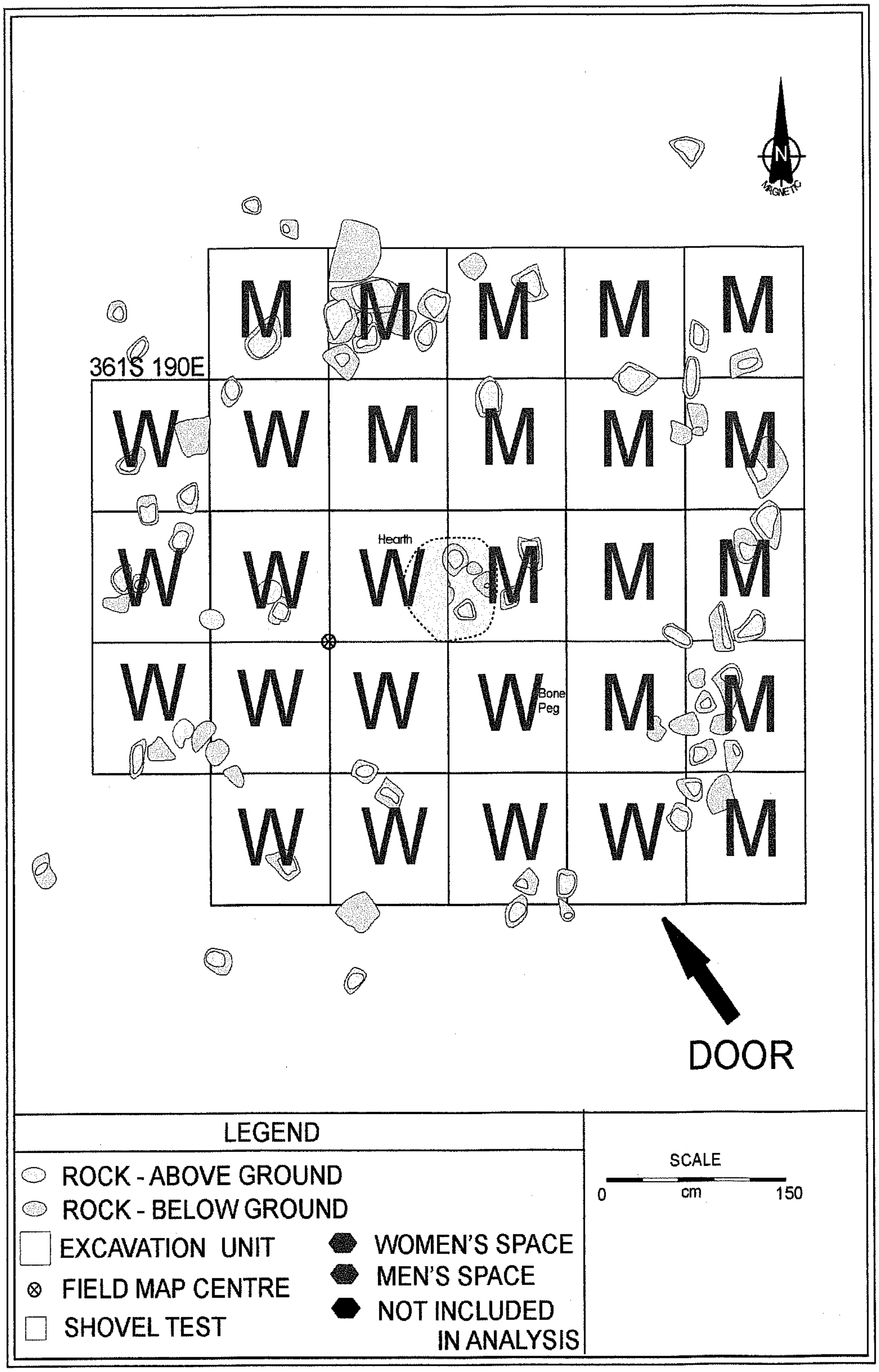

Figure C.5. EbPi-51 Stone Circle 4, Distribution of Gender.

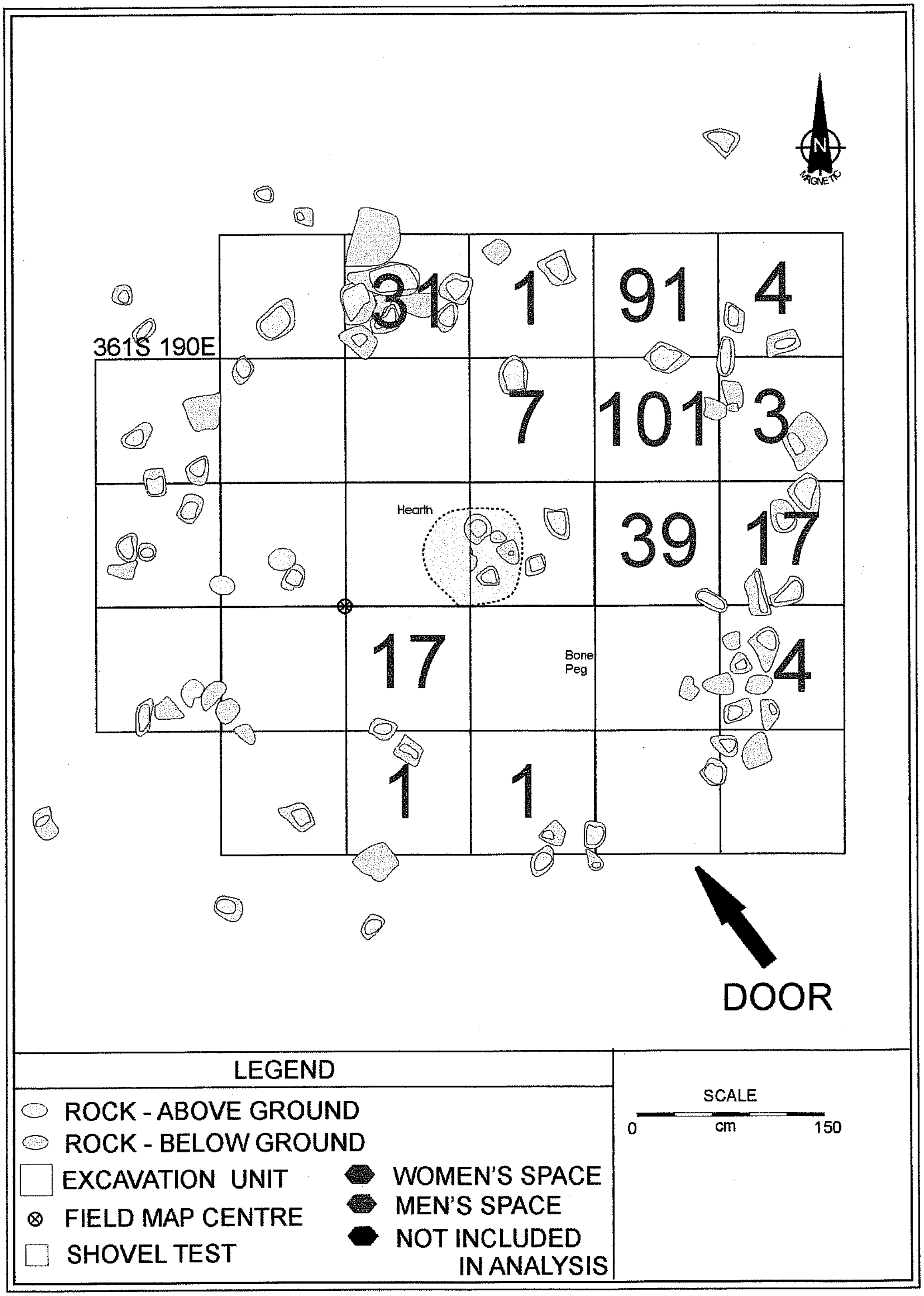

Figure C.6. EbPi-51 Stone Circle 4, Distribution of Ceramics by Gender.

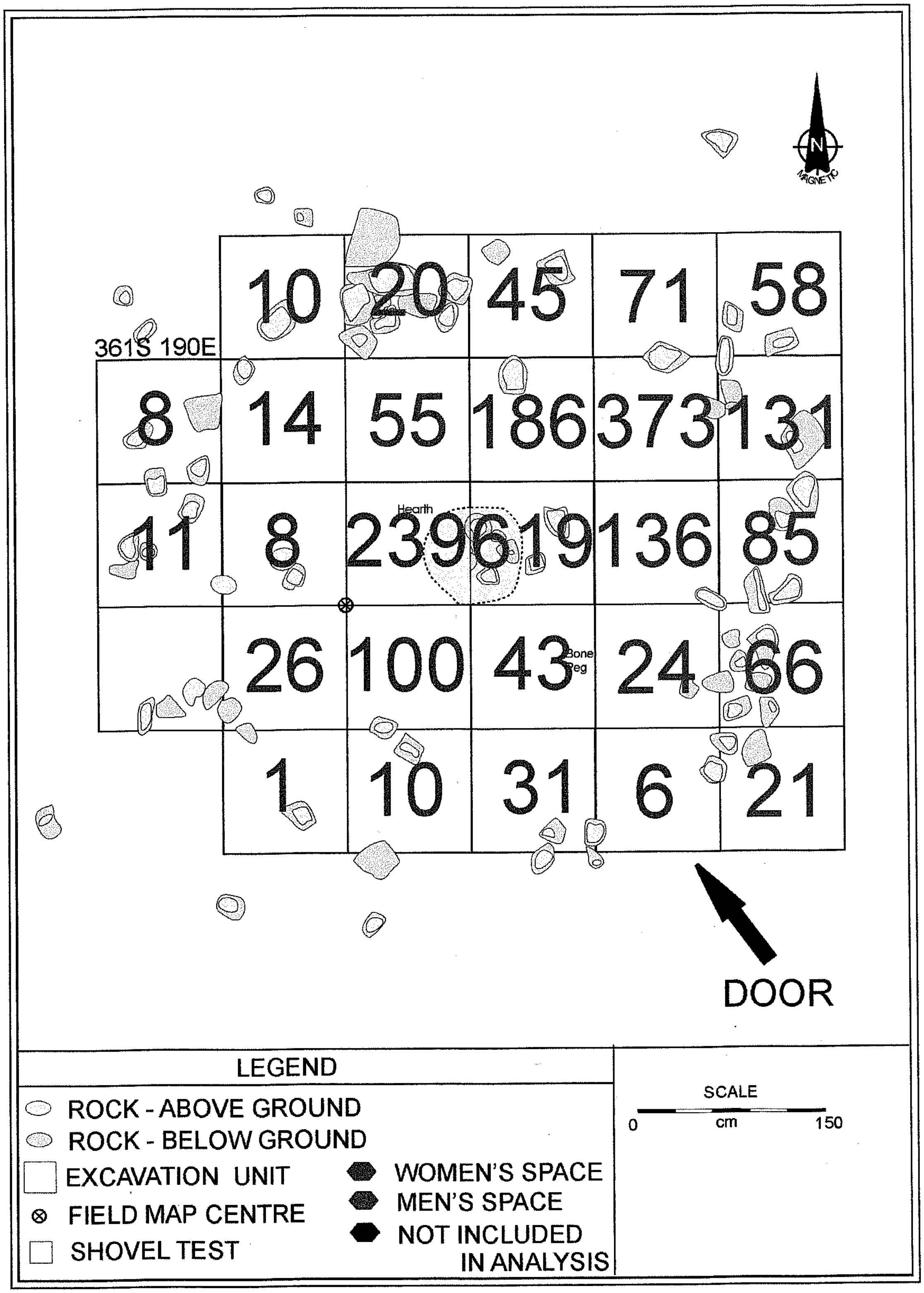

Figure C.7. EbPi-51 Stone Circle 4, Distribution of Faunal Material by Gender.

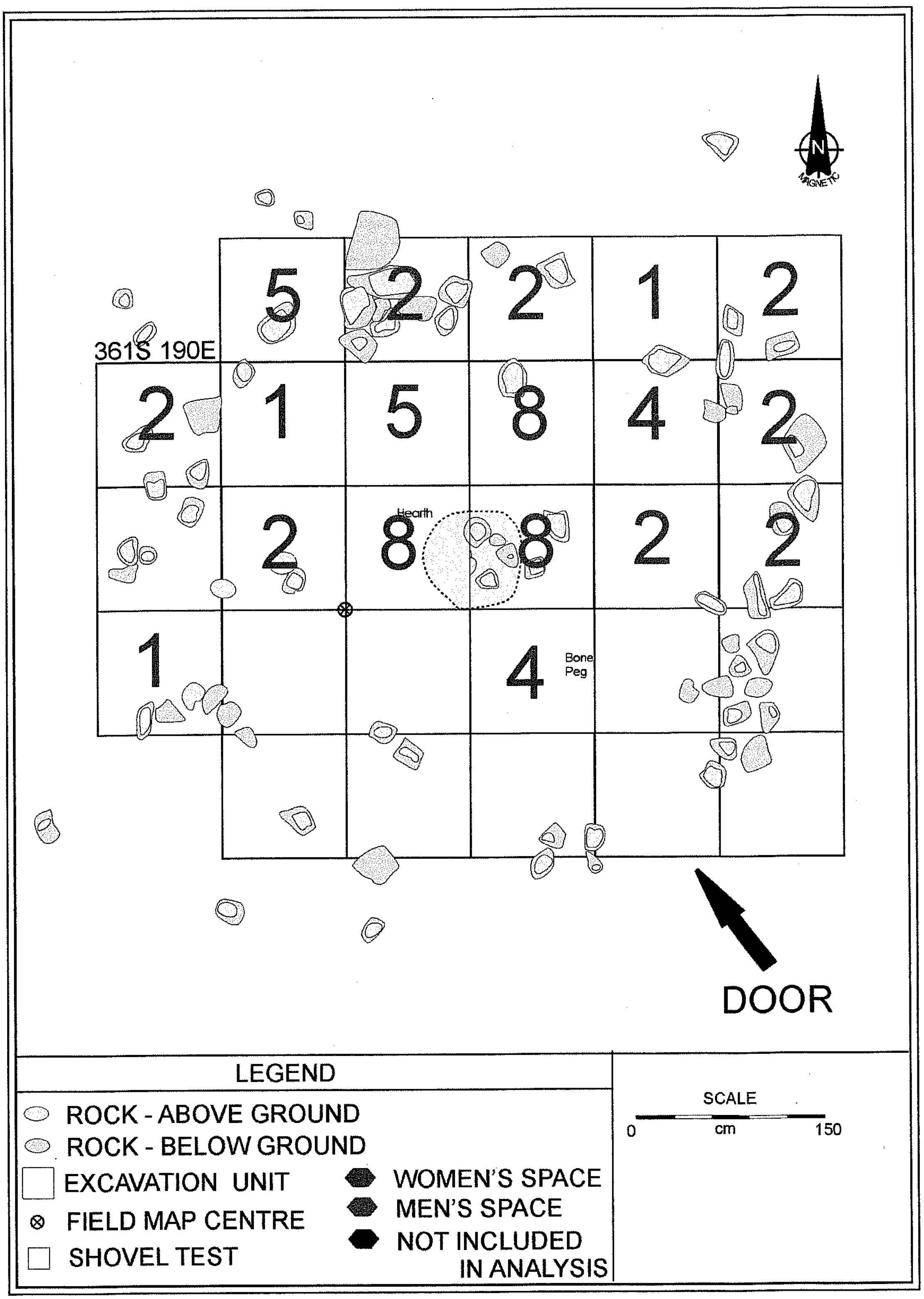

Figure C.8. EbPi-51 Stone Circle 4, Distribution of FBR by Gender.

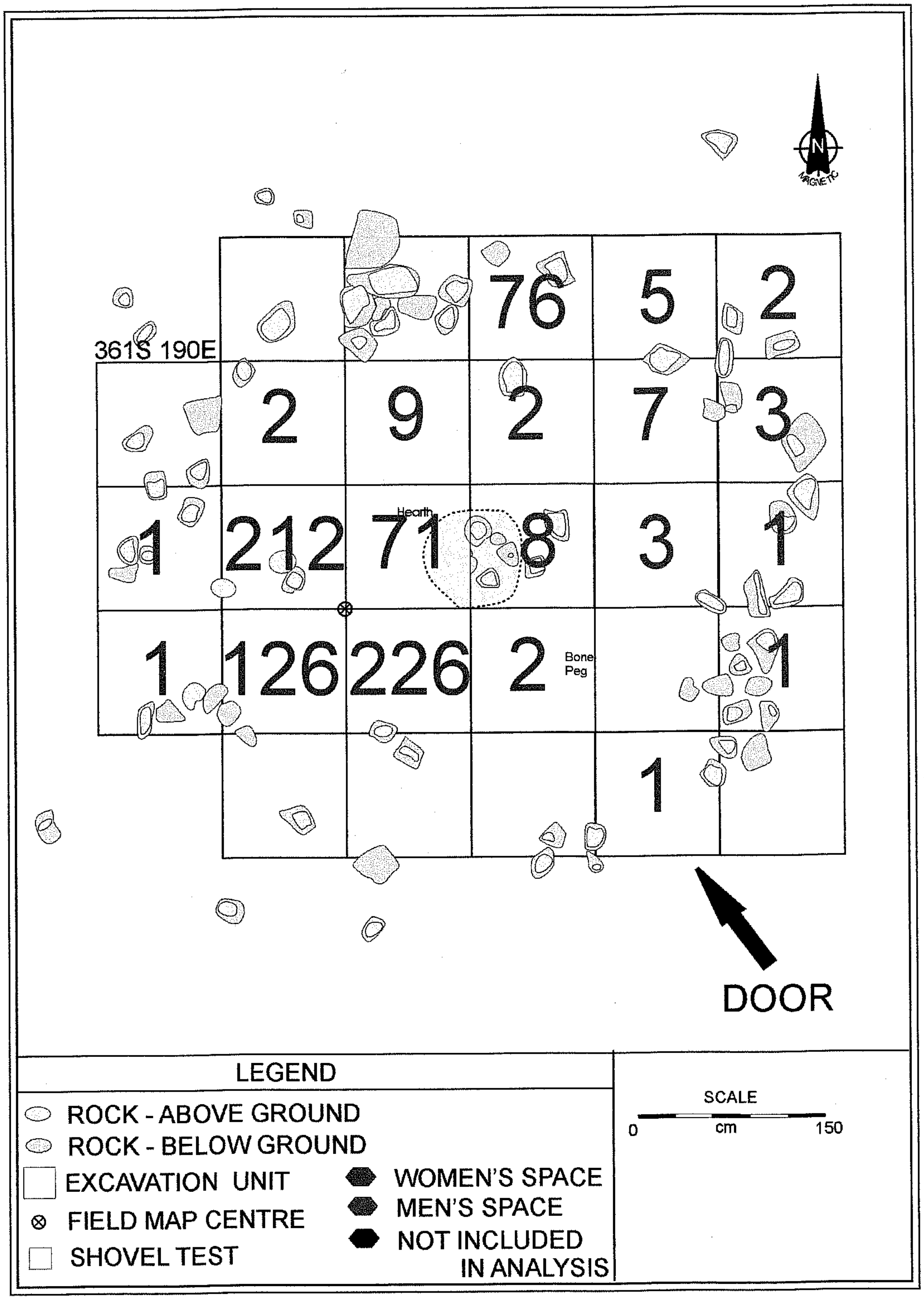

Figure C.9. EbPi-51 Stone Circle 4, Distribution of Lithics by Gender.

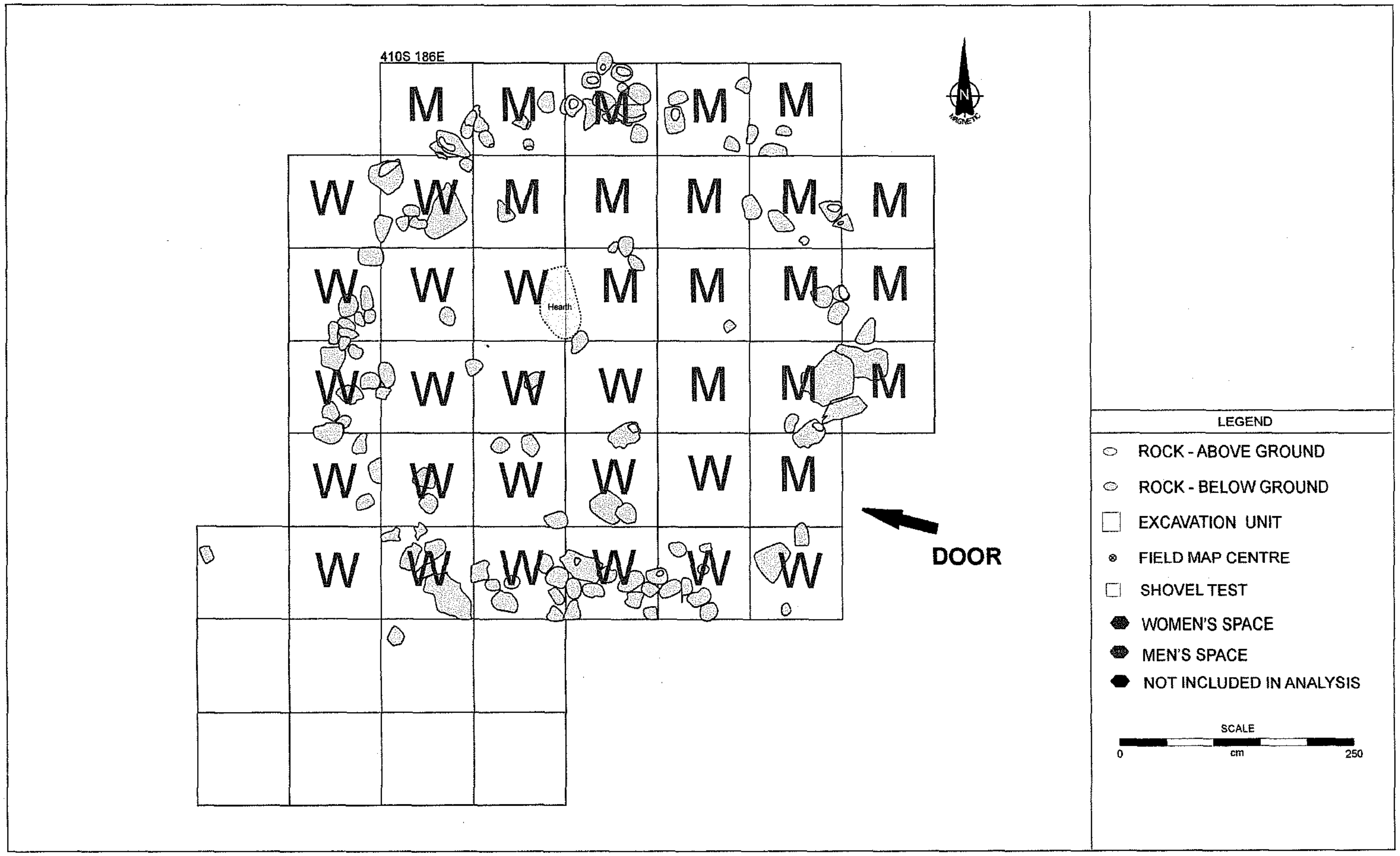

Figure C.10. EbPi-51 Stone Circle 8, Distribution by Gender.

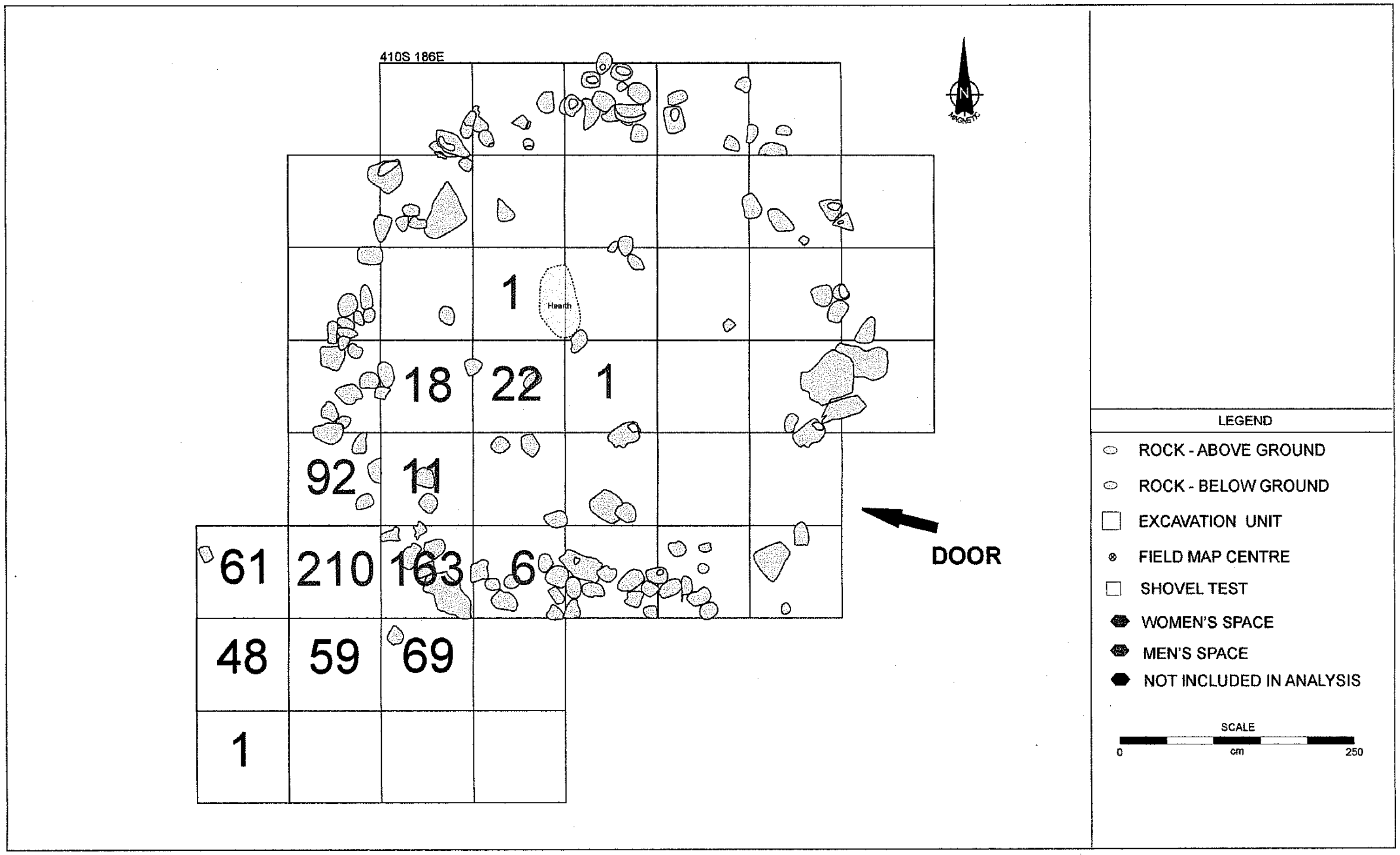

Figure C.11. EbPi-51 Stone Circle 8, Distribution of Ceramics by Gender.

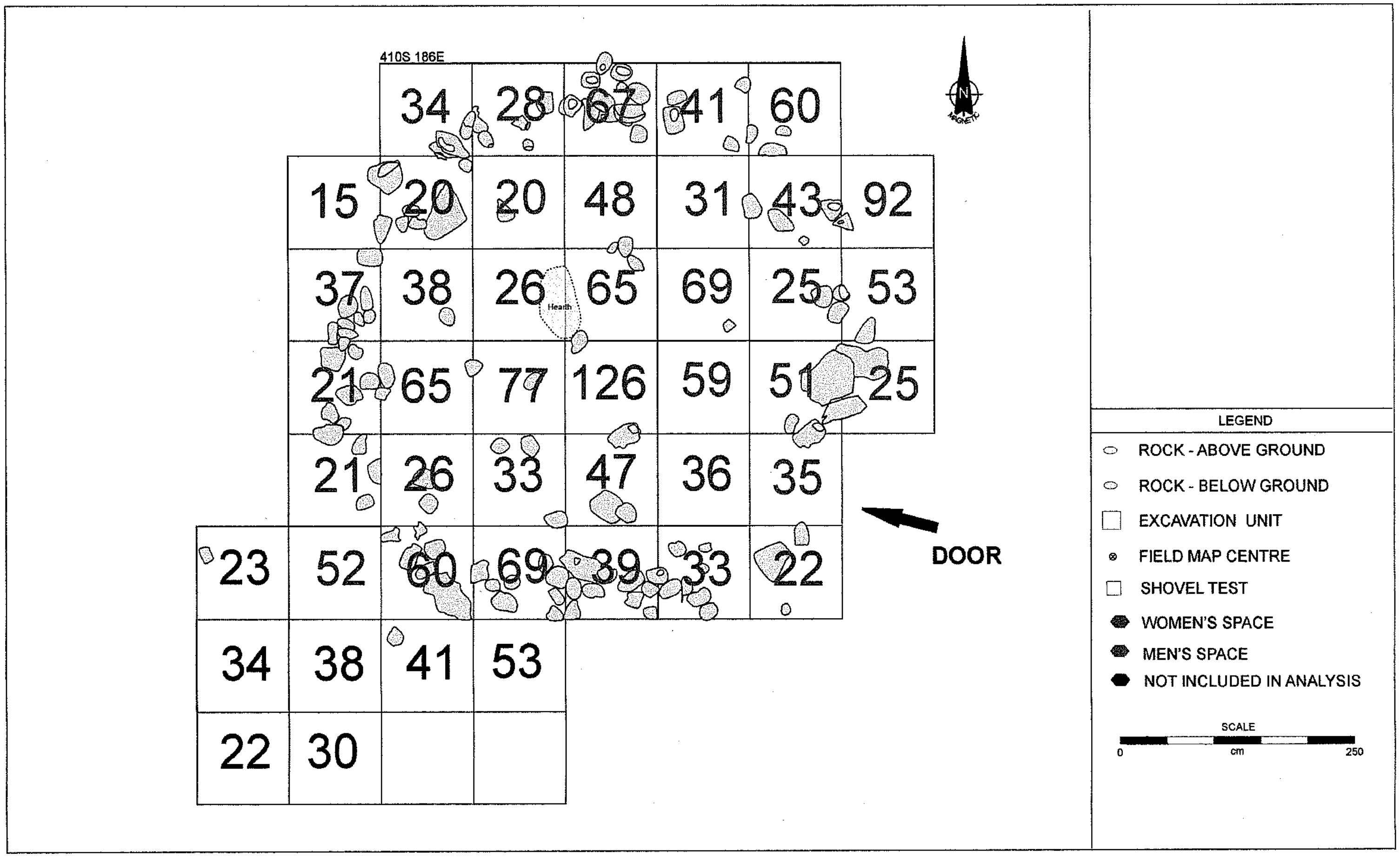

Figure C.12. EbPi-51 Stone Circle 8, Distribution of Faunal Material by Gender.

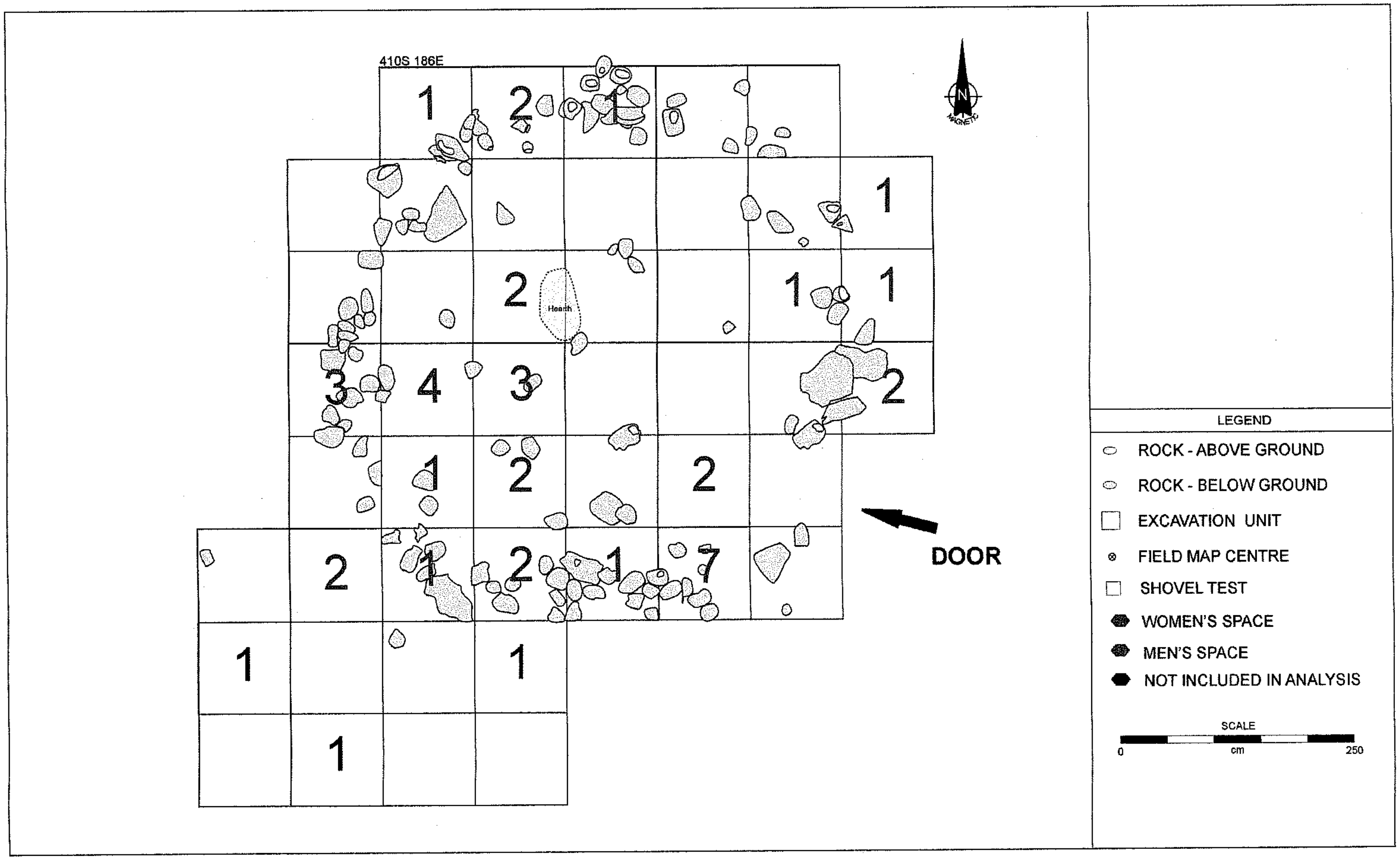

Figure C.13. EbPi-51 Stone Circle 8, Distribution of FBR by Gender.

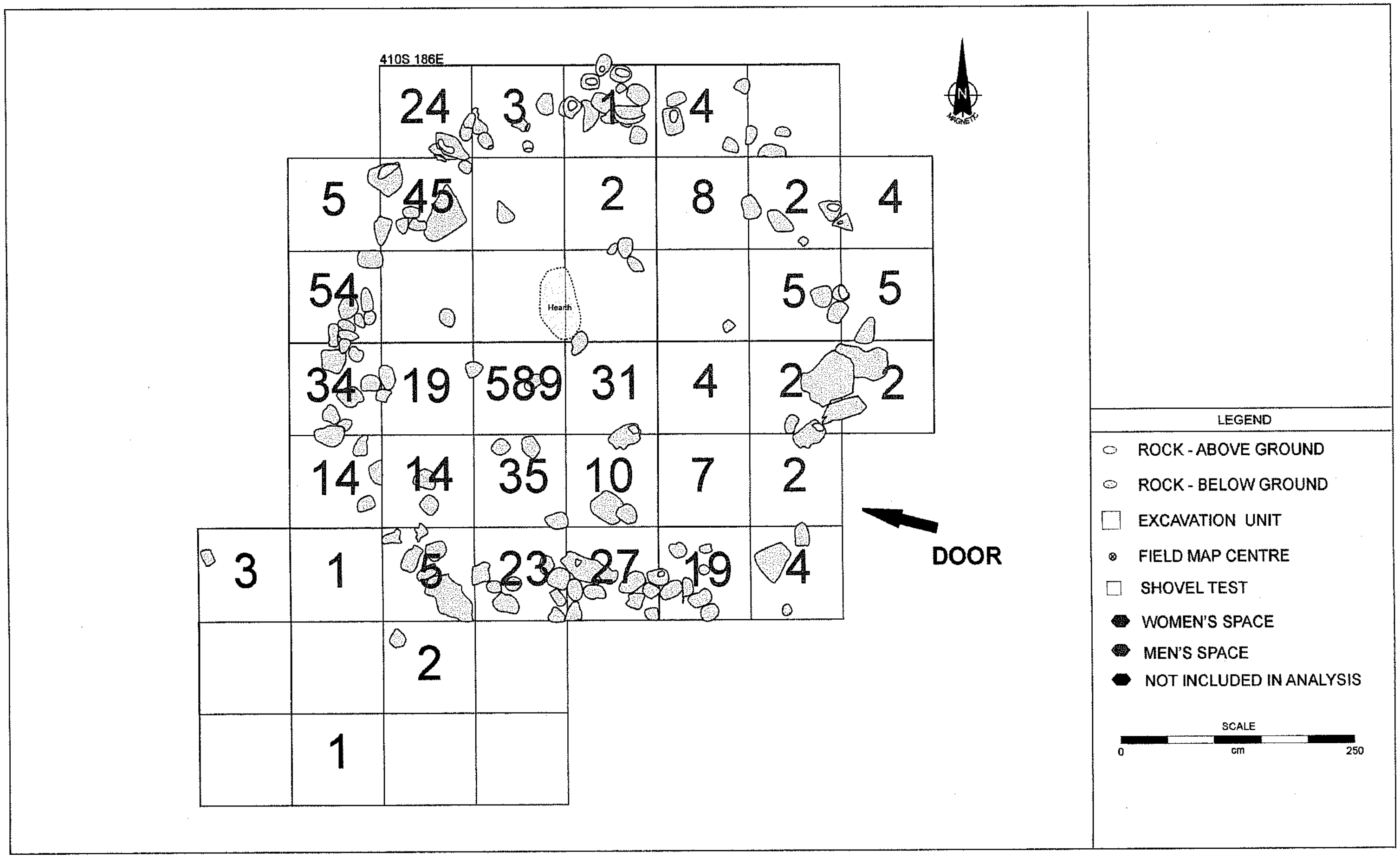

Figure C.14. EbPi-51 Stone Circle 8, Distribution of Lithics by Gender.

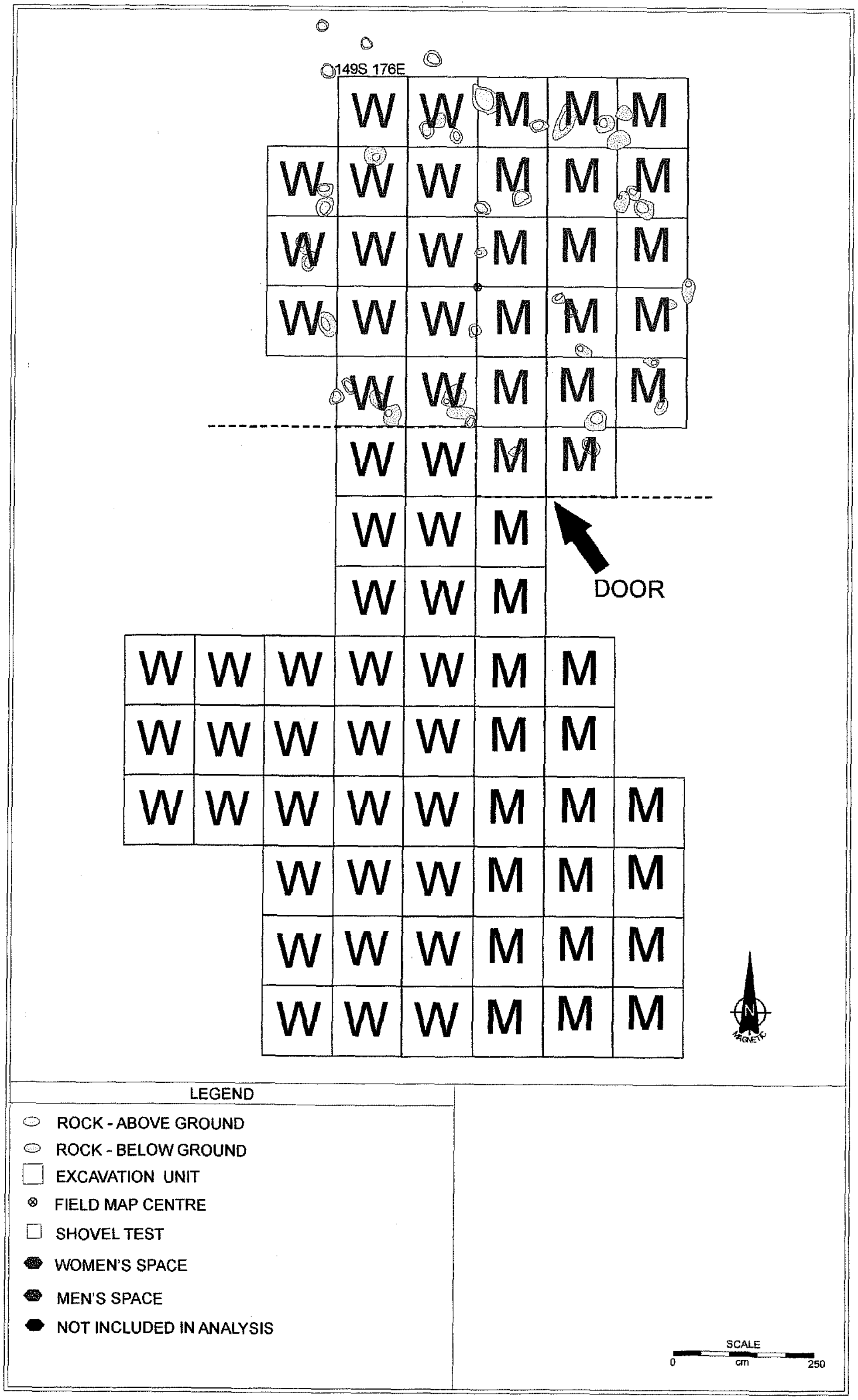

Figure C.15. EbPi-52 Stone Circle 8, Distribution of the Interior Space by Gender.

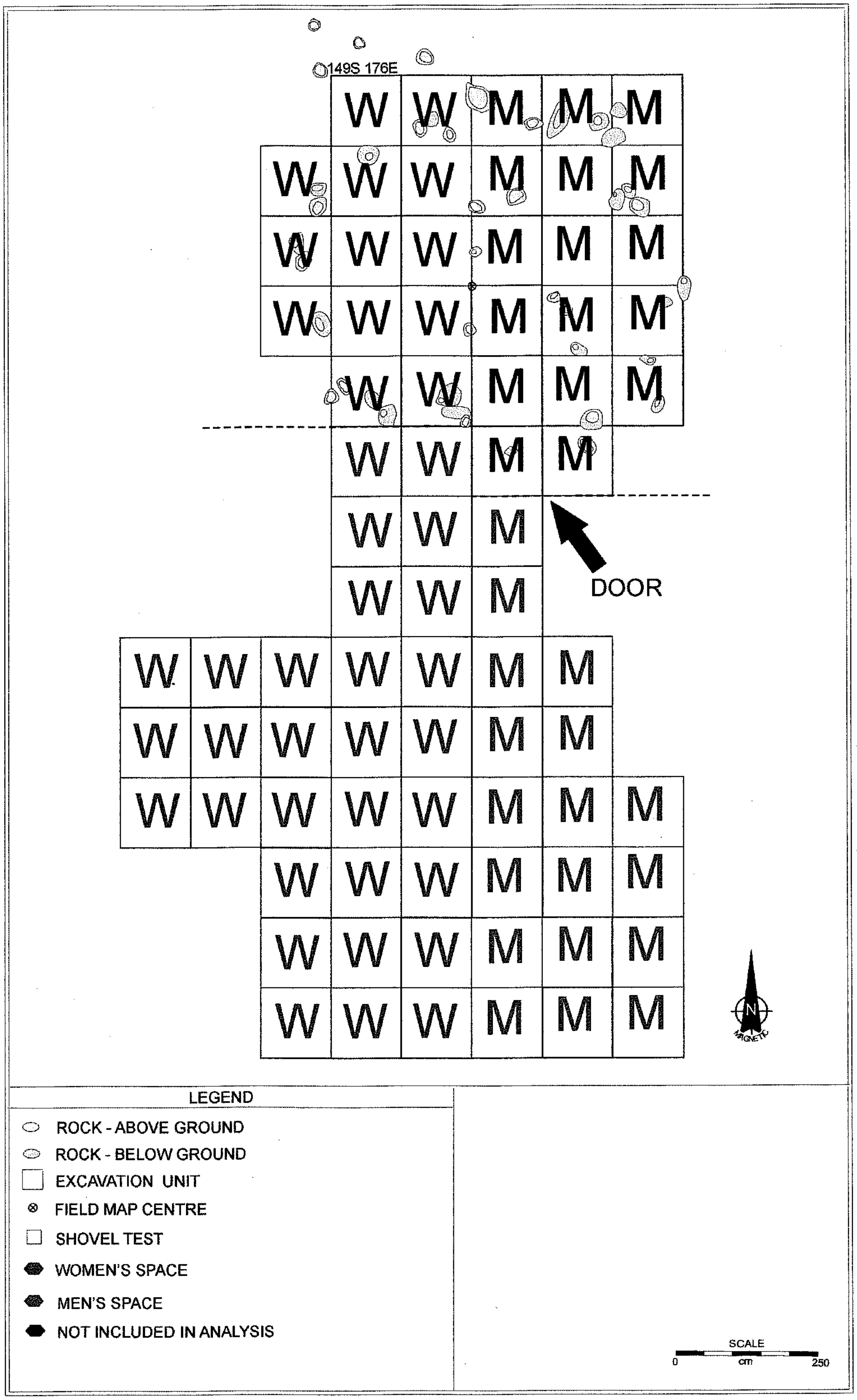

Figure C.16. EbPi-52 Stone Circle 8, Distribution of the Exterior Space by Gender.

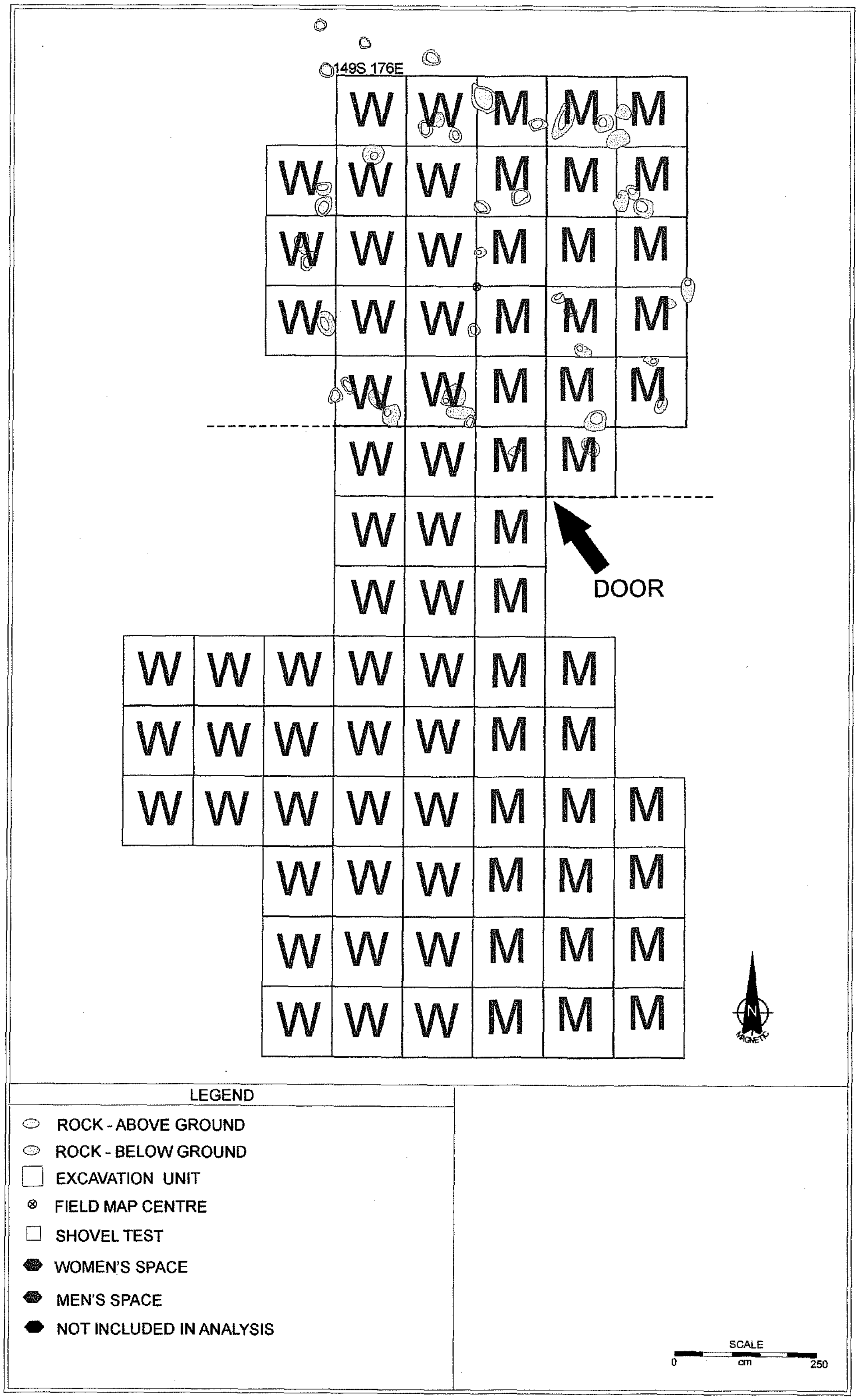

Figure C.17. EbPi-52 Stone Circle 8, Distribution of the Interior and Exterior Space by Gender.

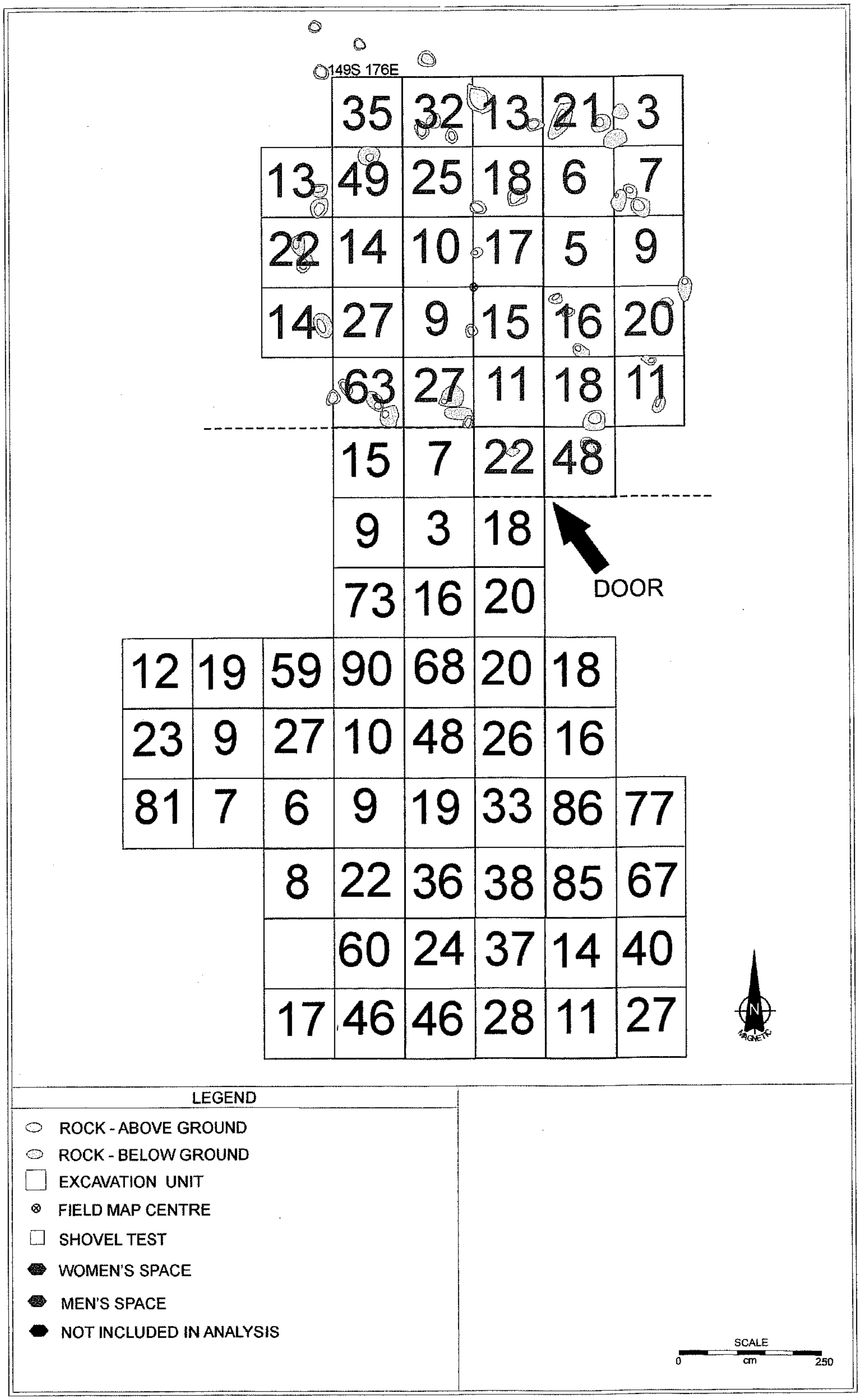

Figure C.18. EbPi-52 Stone Circle 8, Distribution of Faunal Material by Gender, Interior Space.

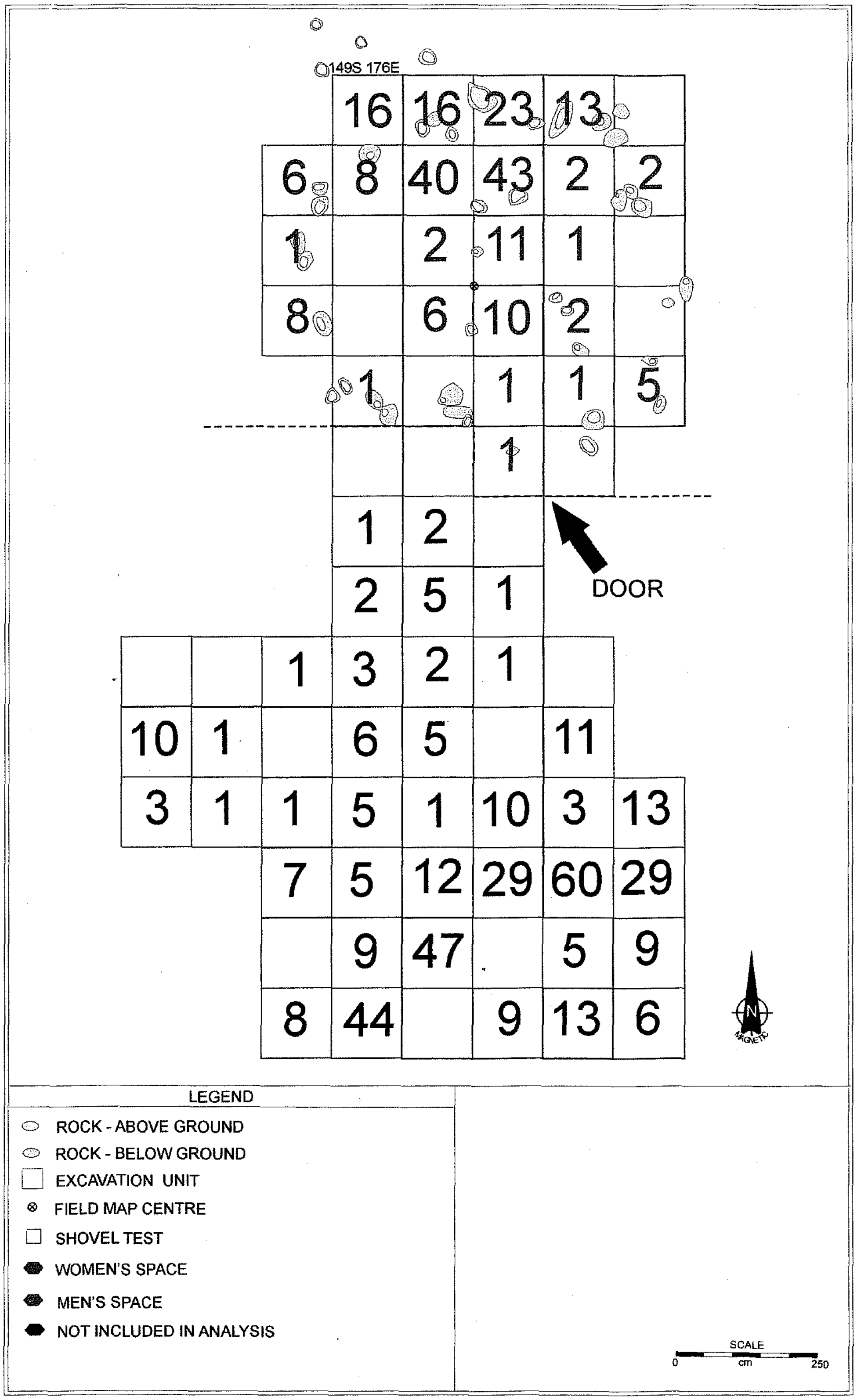

Figure C.19. EbPi-52 Stone Circle 8, Distribution of FBR by Gender, Interior Space.

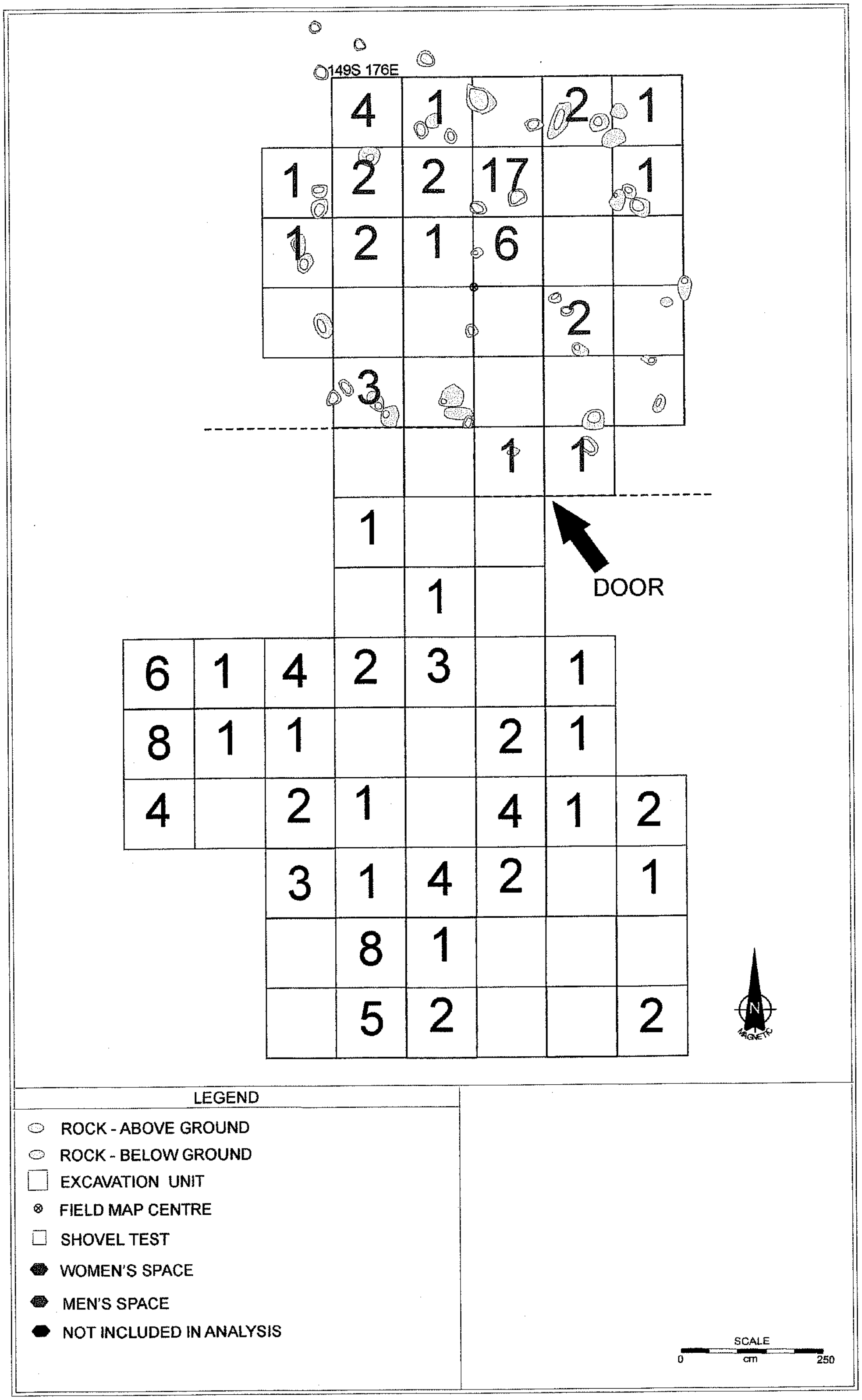

Figure C.20. EbPi-52 Stone Circle 8, Distribution of Lithics by Gender, Interior Space.

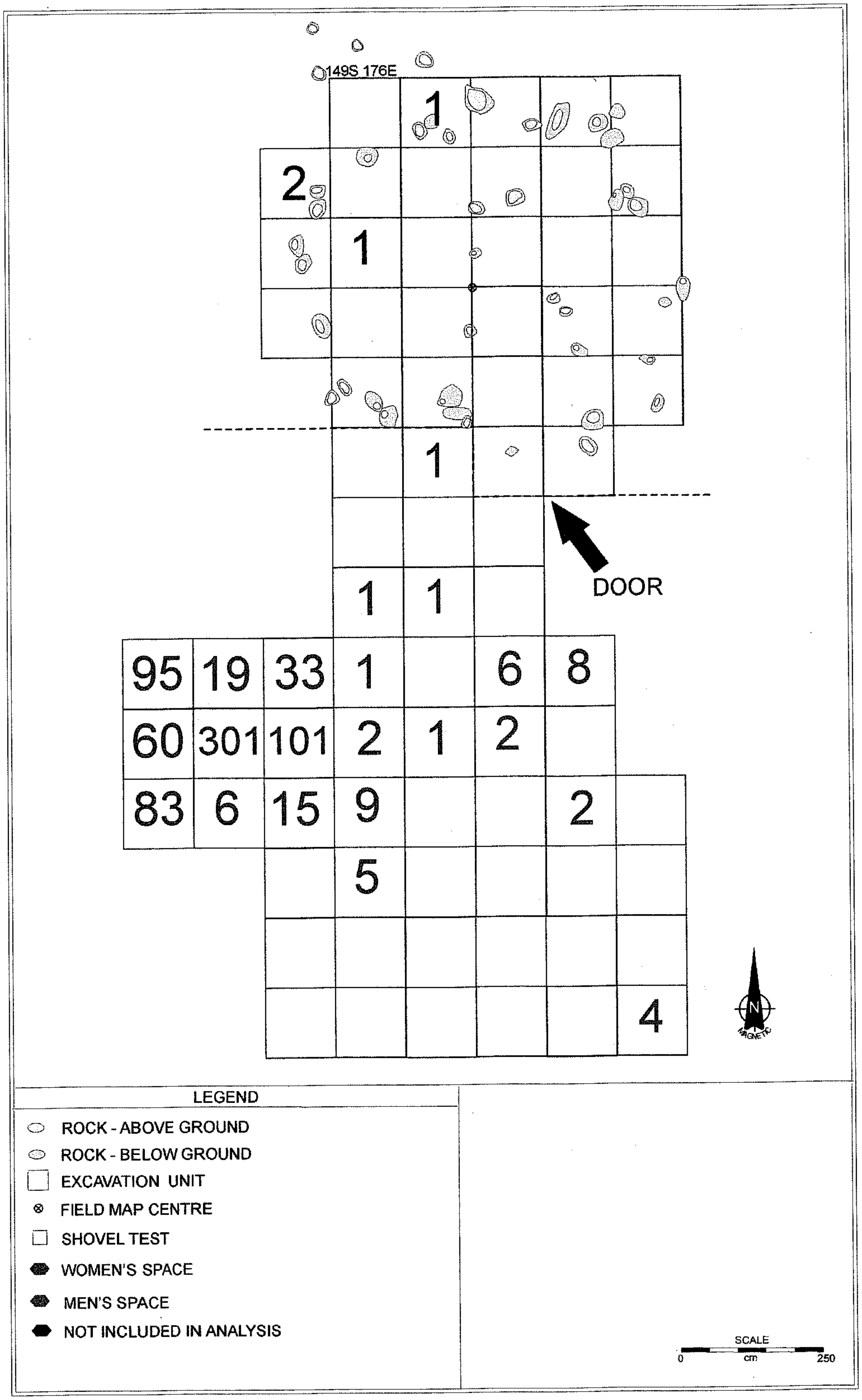

Figure C.21. EbPi-52 Stone Circle 8, Distribution of Ceramics by Gender, Exterior Space.

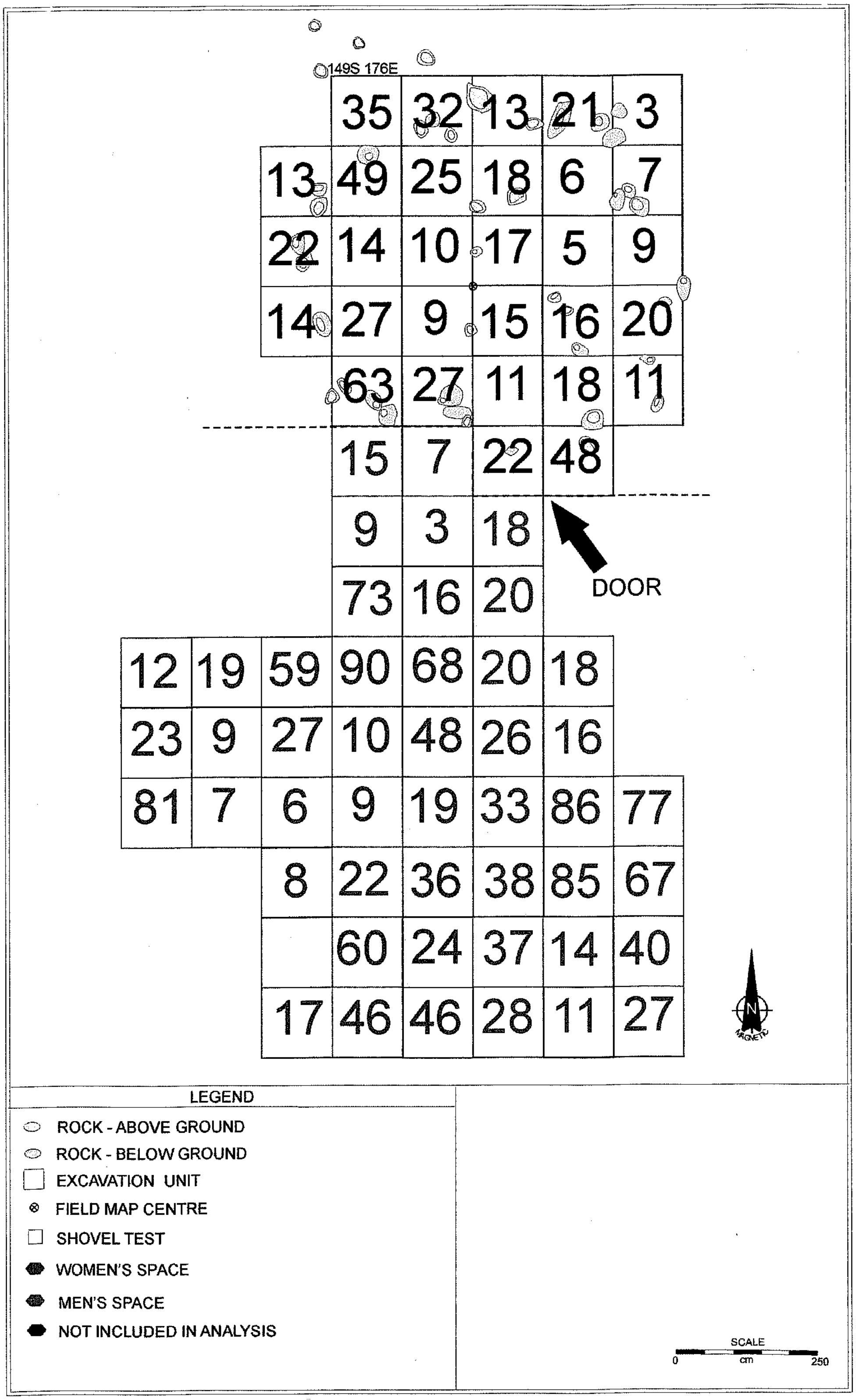

Figure C.22. EbPi-52 Stone Circle 8, Distribution of Faunal Material by Gender, Exterior Space.

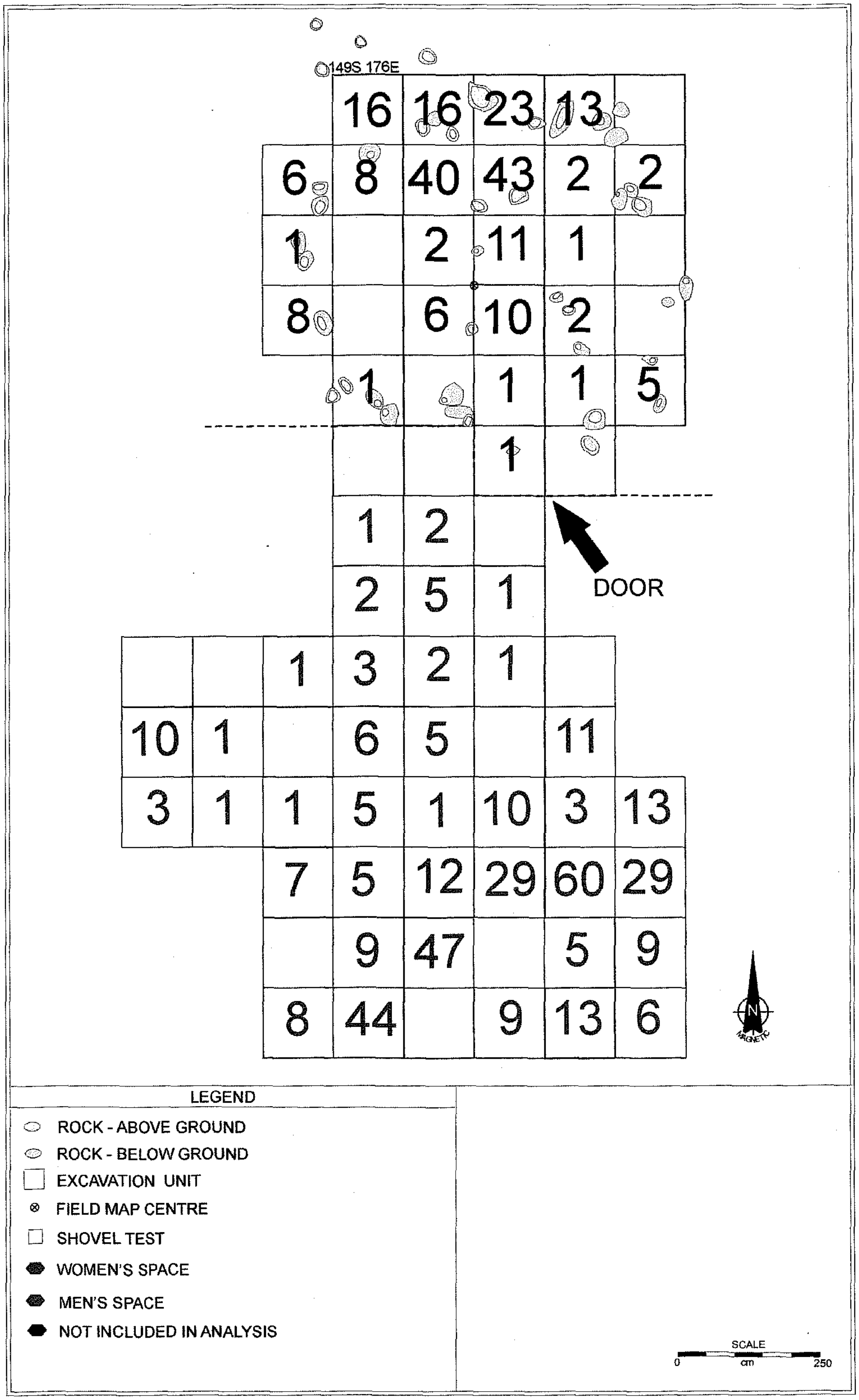

Figure C.23. EbPi-52 Stone Circle 8, Distribution of FBR by Gender, Exterior Space.

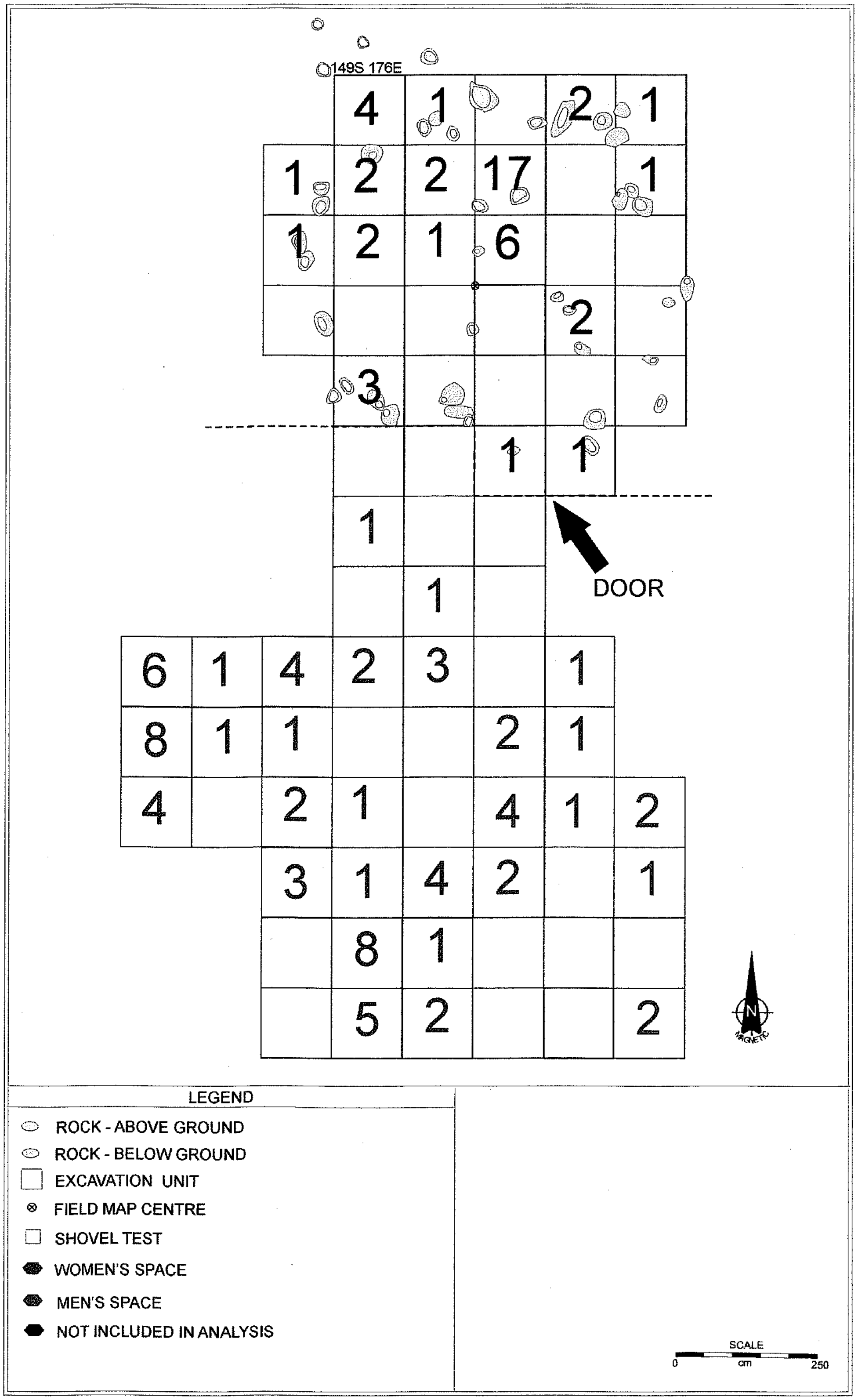

Figure C.24. EbPi-52 Stone Circle 8, Distribution of Lithics by Gender, Exterior Space.

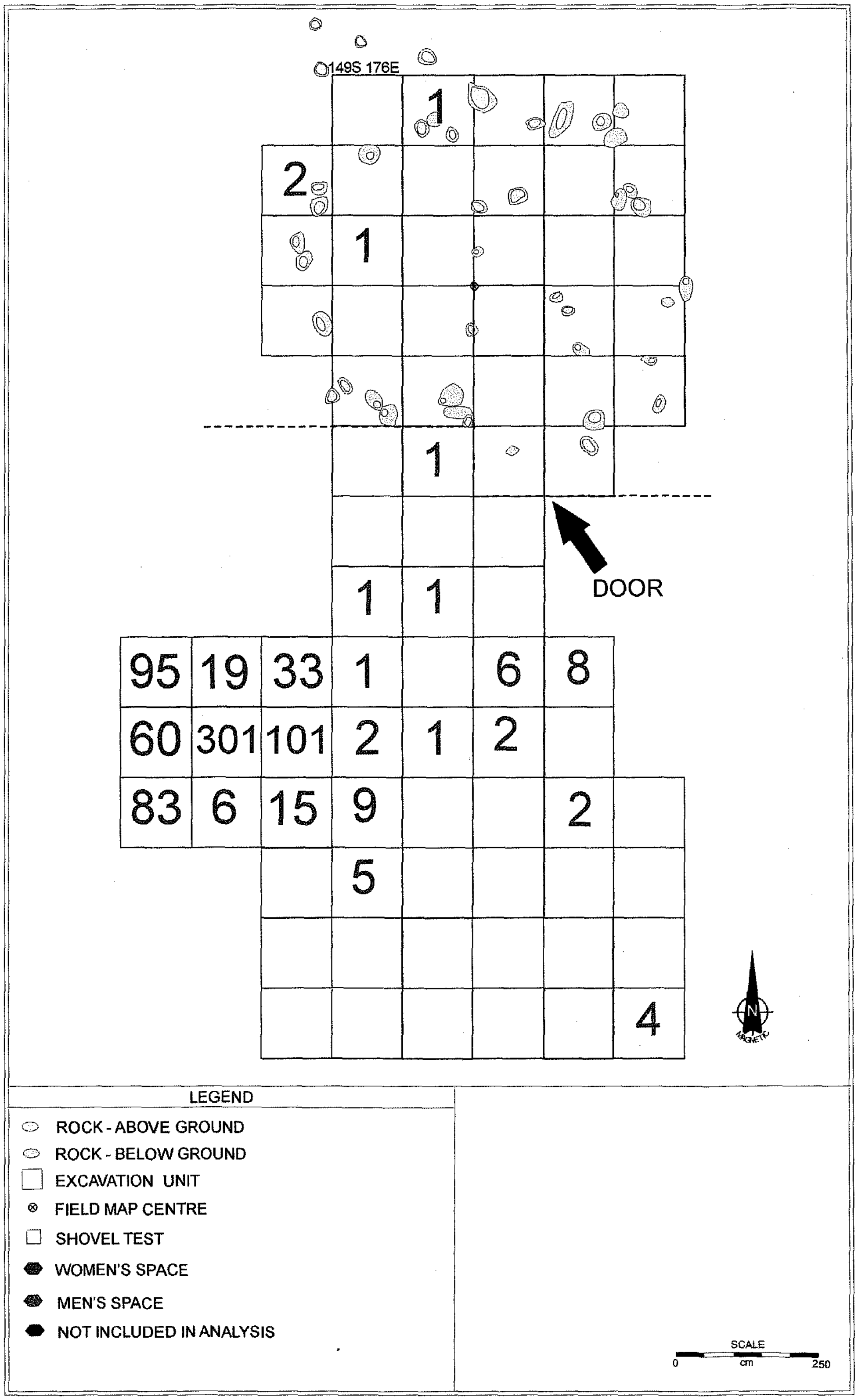

Figure C.25. EbPi-52 Stone Circle 8, Distribution of Ceramics by Gender, Interior and Exterior Space.

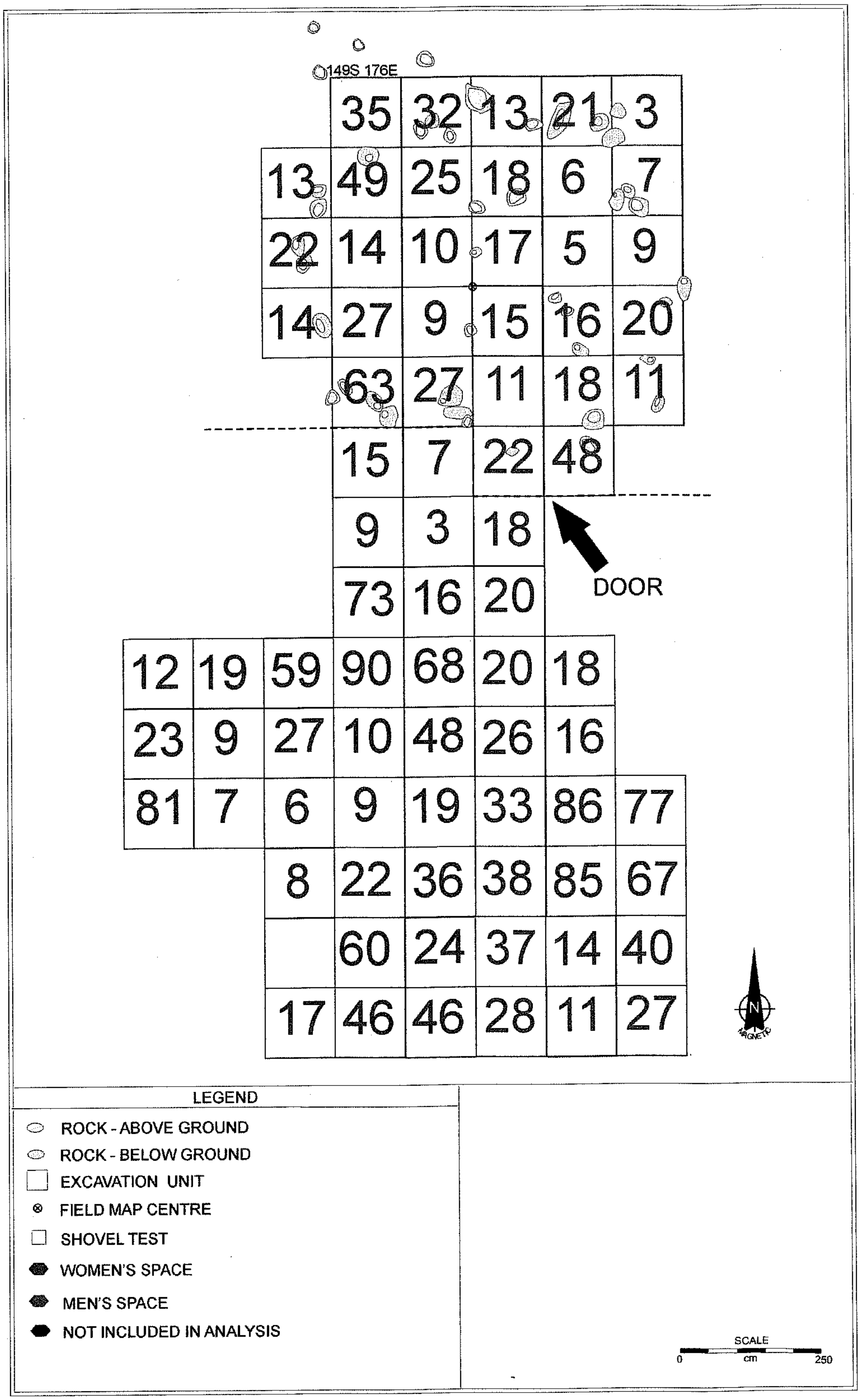

Figure C.26. EbPi-52 Stone Circle 8, Distribution of Faunal Material by Gender, Interior and Exterior Space.

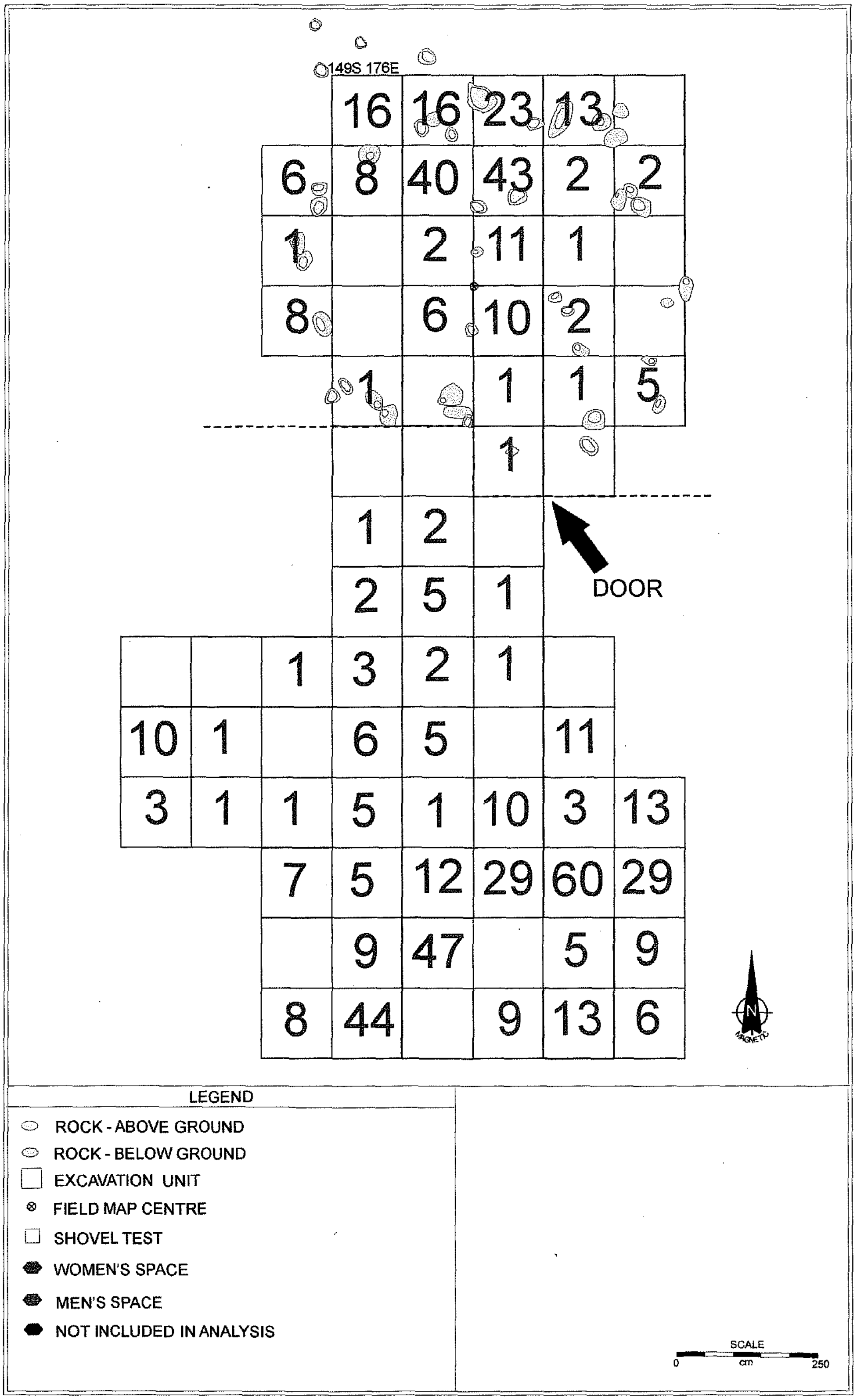

Figure C.27. EbPi-52 Stone Circle 8, Distribution of FBR by Gender, Interior and Exterior Space.

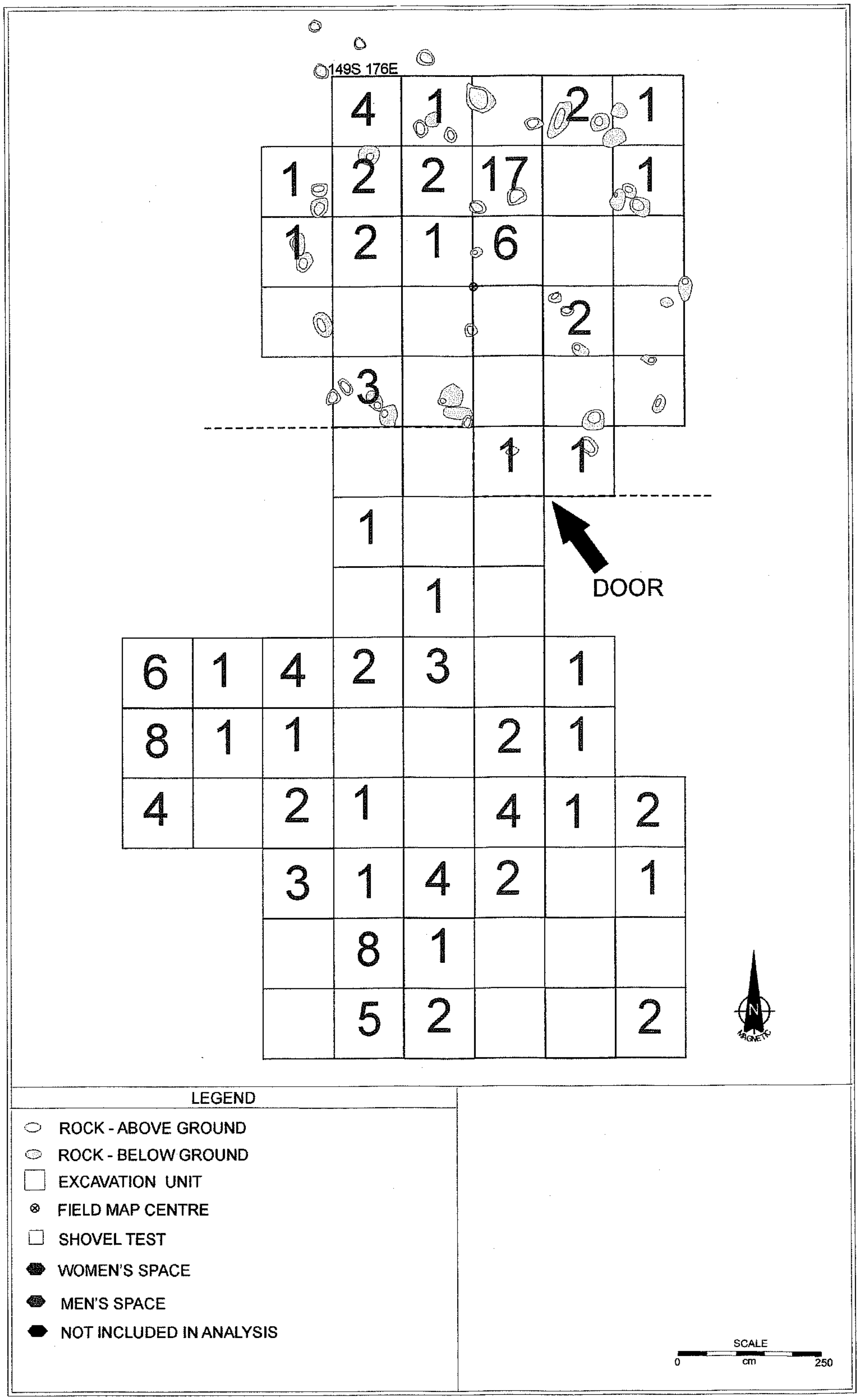

Figure C.28. EbPi-52 Stone Circle 8, Distribution of Lithics by Gender, Interior and Exterior Space.

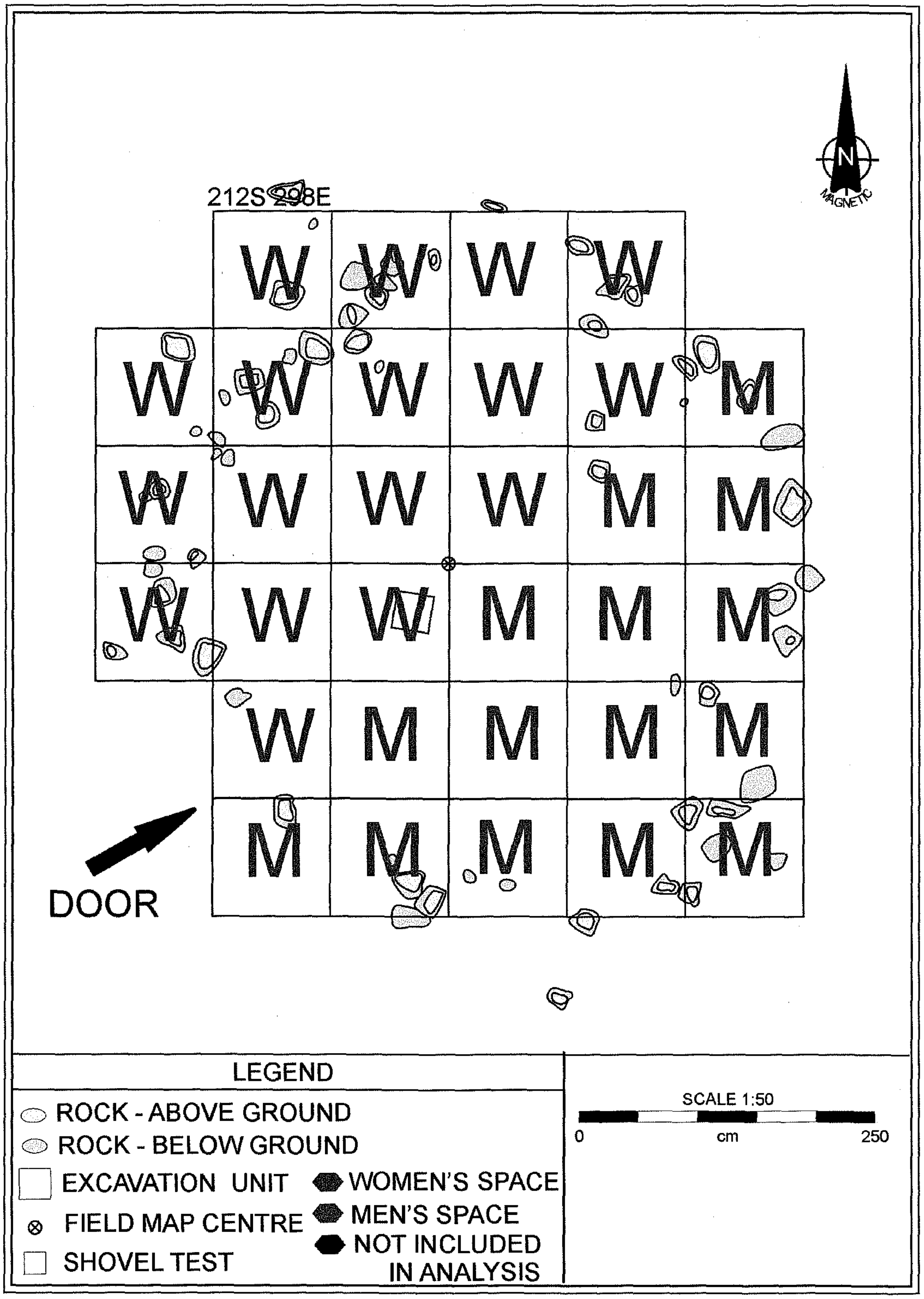

Figure C.29. EbPi-53 Stone Circle 1, Distribution by Gender.

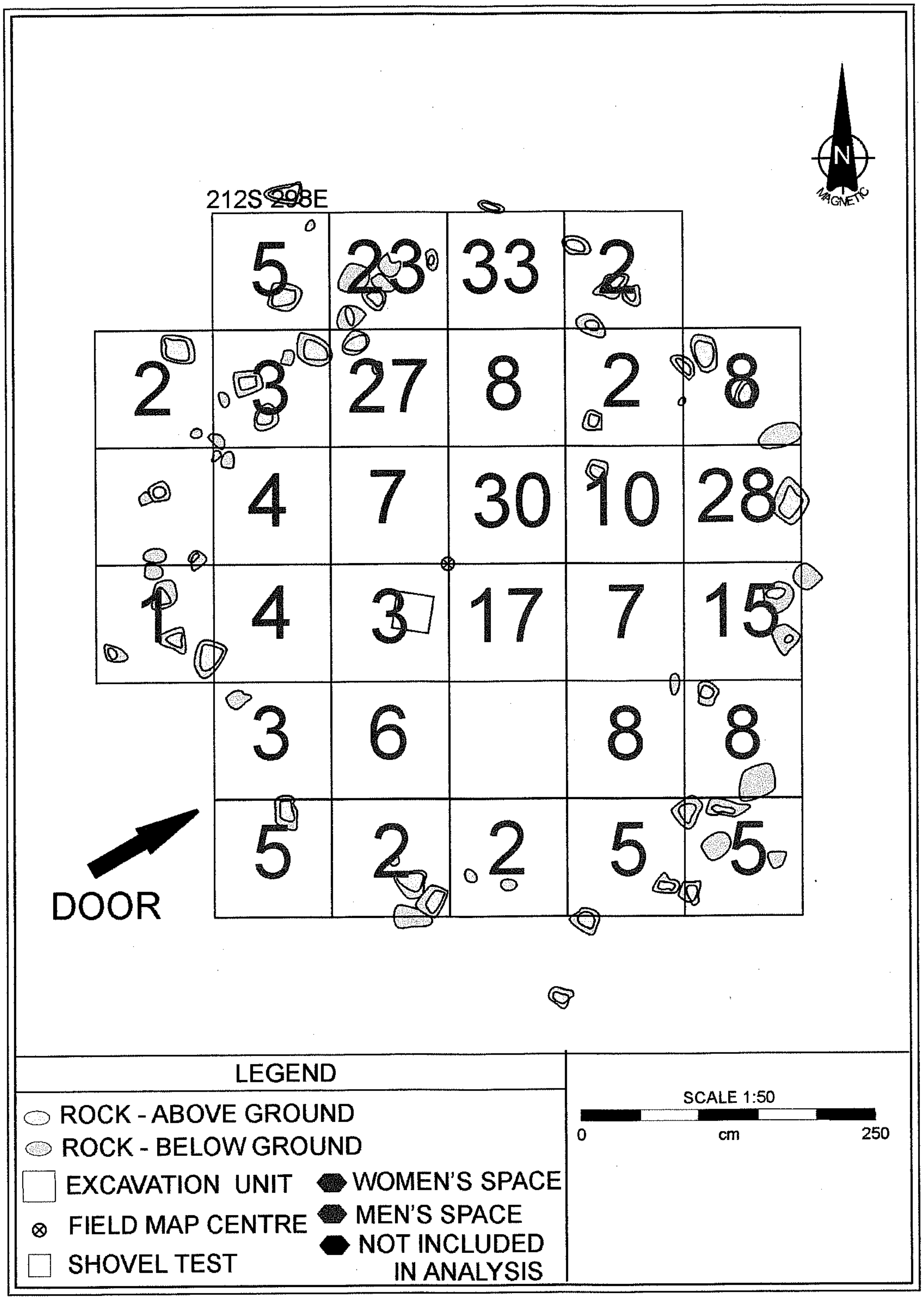

Figure C.30. EbPi-53 Stone Circle 1, Distribution of Faunal Material by Gender.

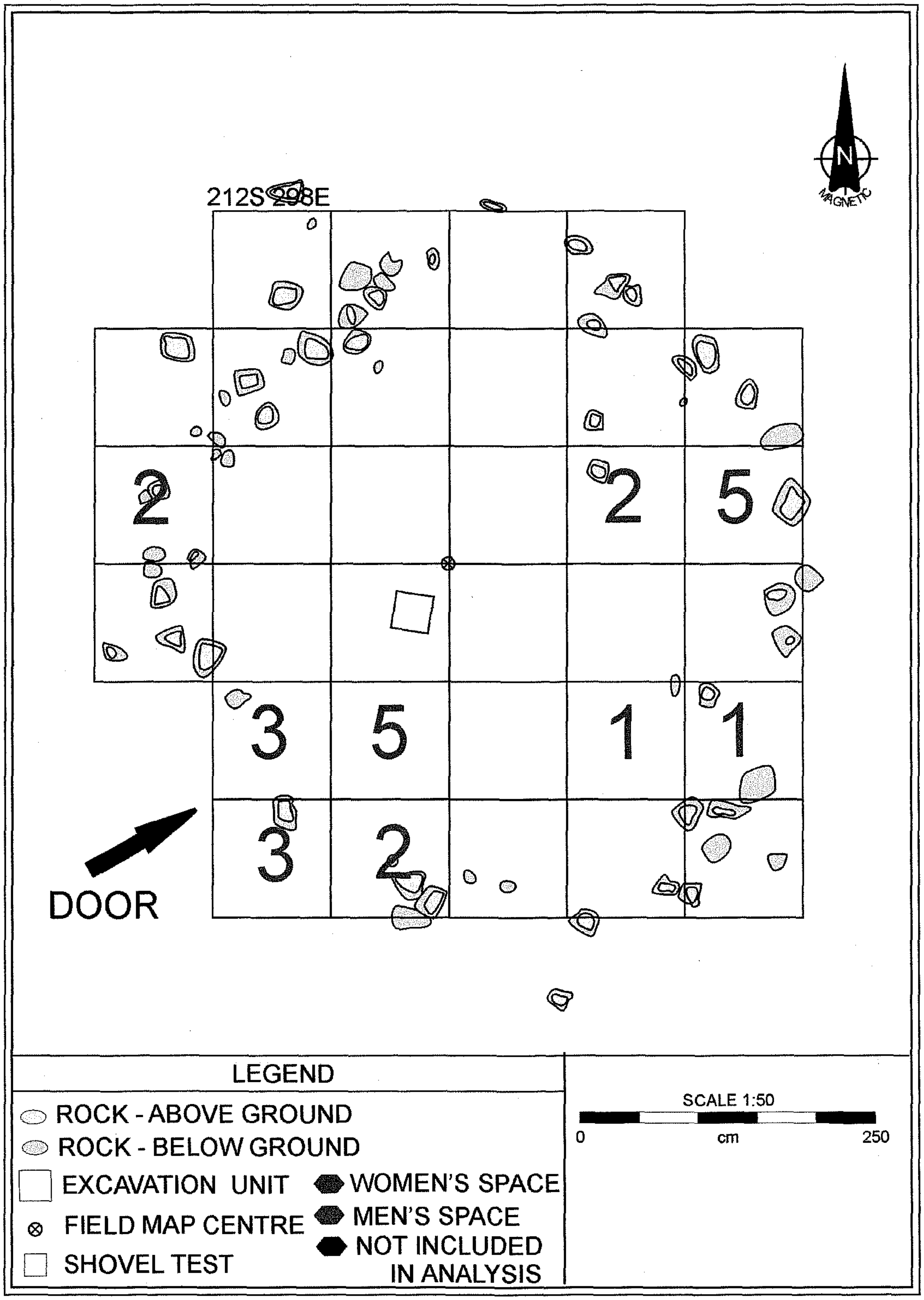

Figure C.31. EbPi-53 Stone Circle 1, Distribution of FBR by Gender.

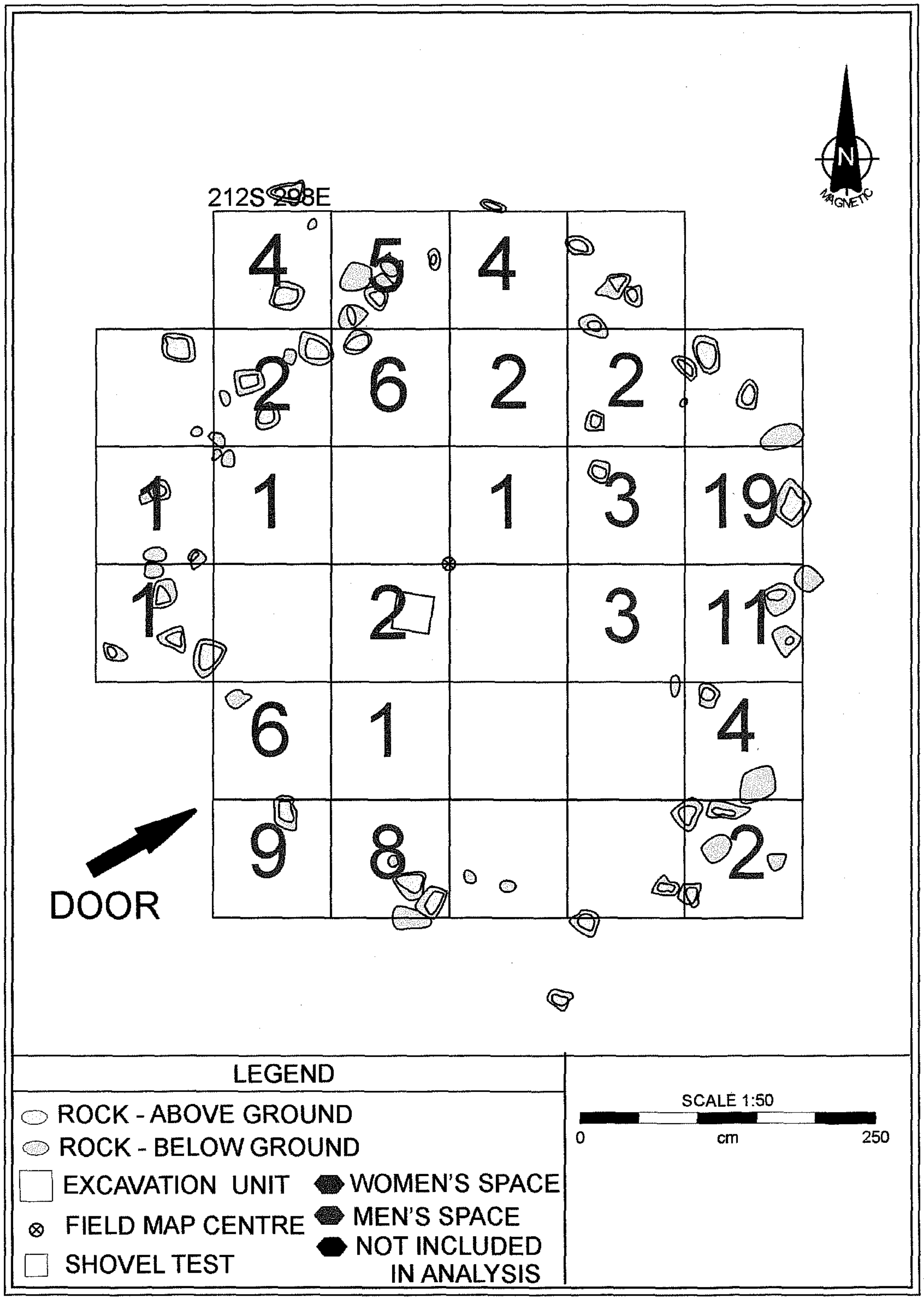

Figure C.32. EbPi-53 Stone Circle 1, Distribution of Lithics by Gender.

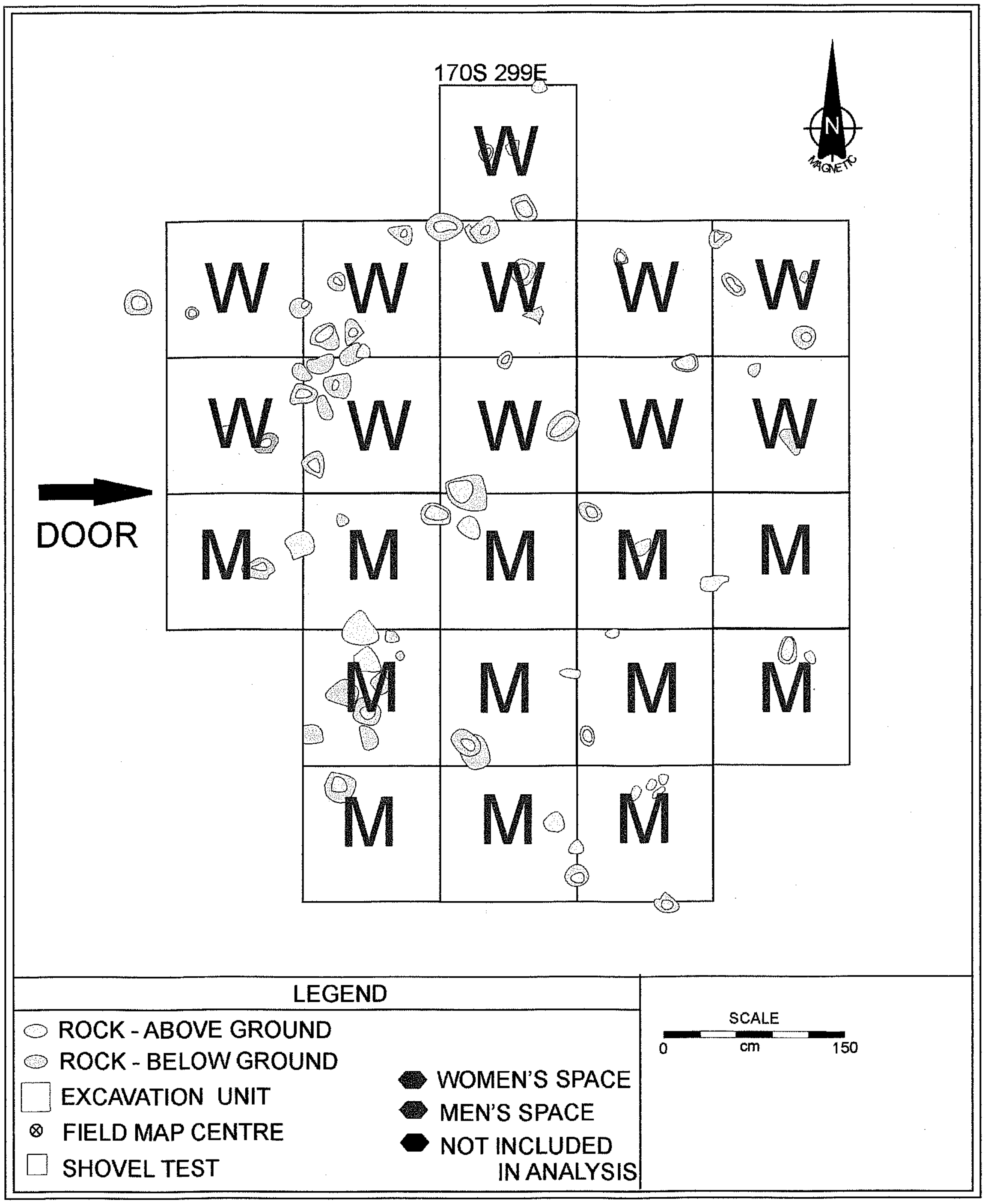

Figure C.33. EbPi-53 Stone Circle 6, Distribution by Gender.

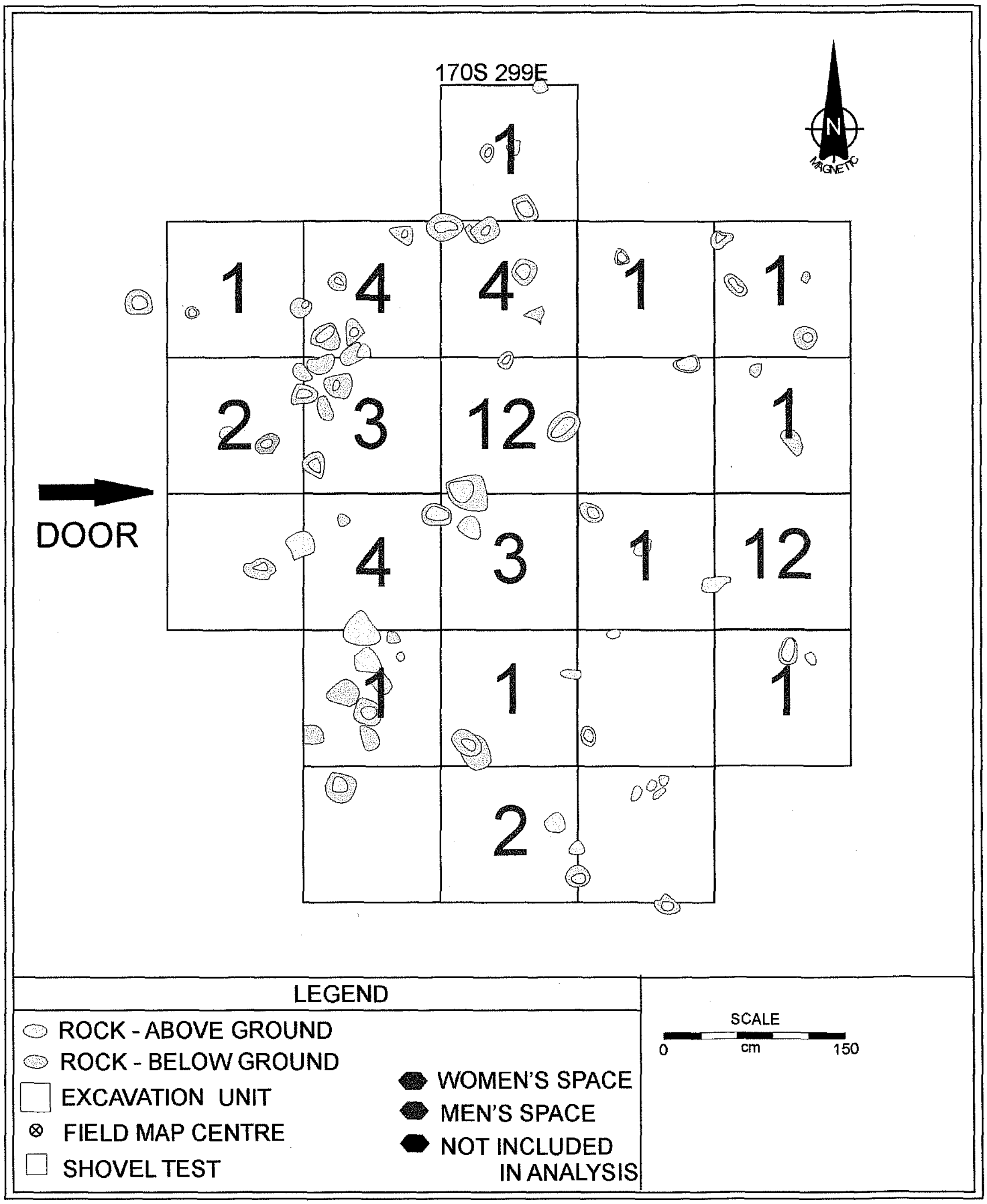

Figure C.34. EbPi-53 Stone Circle 6, Distribution of Faunal Material by Gender.

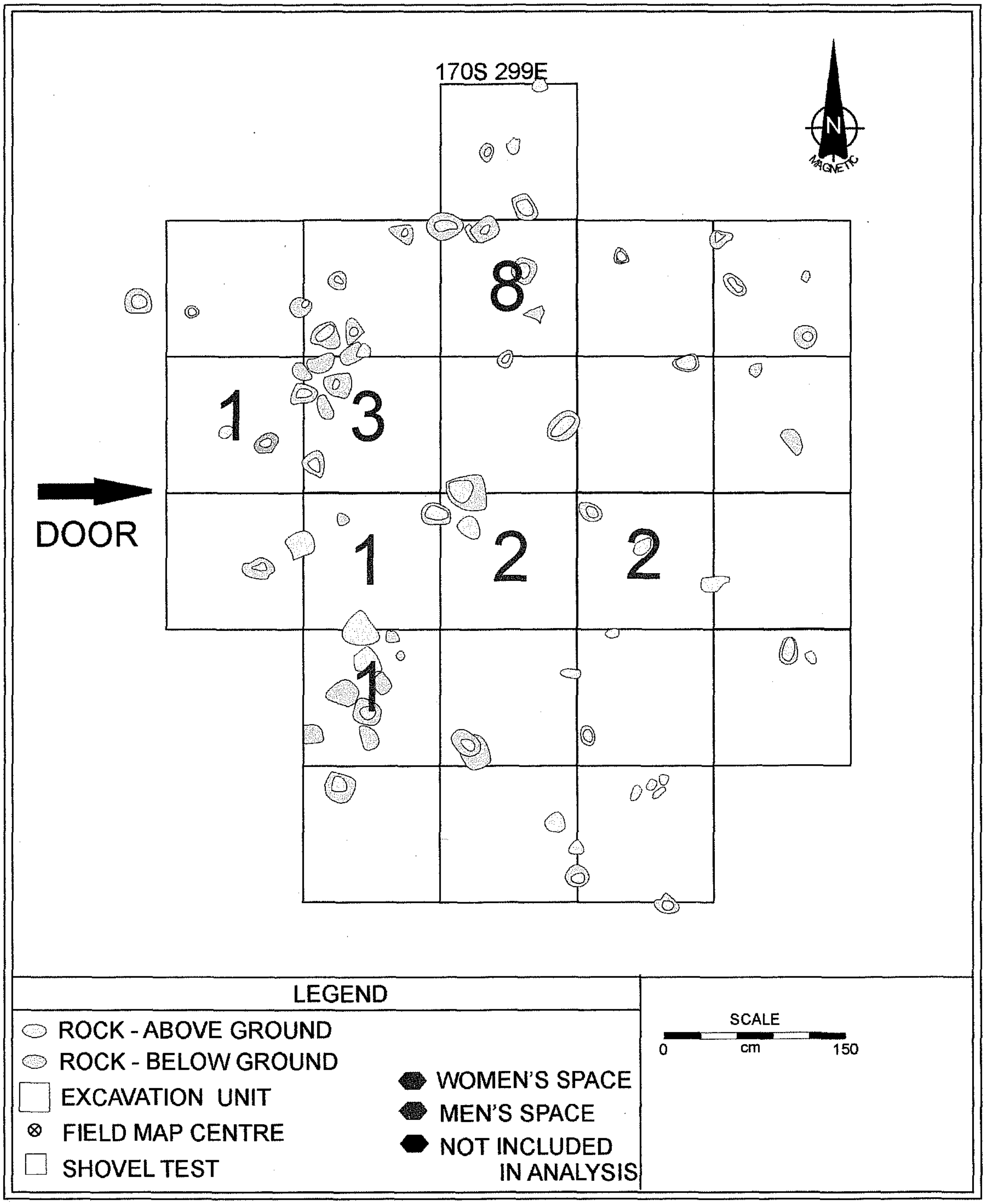

Figure C.35. EbPi-53 Stone Circle 6, Distribution of Lithics by Gender.

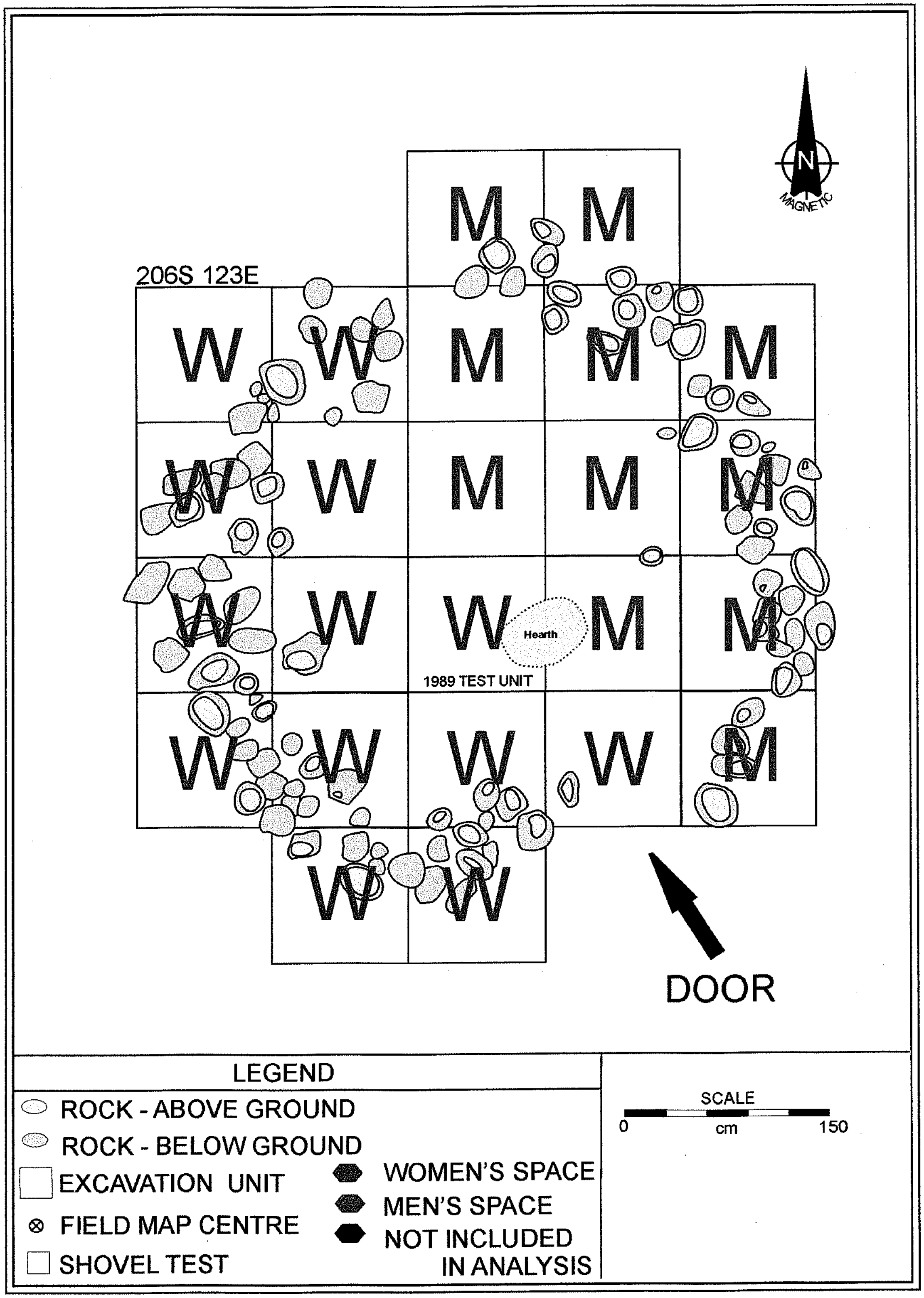

Figure C.36. EbPi-61 Stone Circle 1, Distribution by Gender.

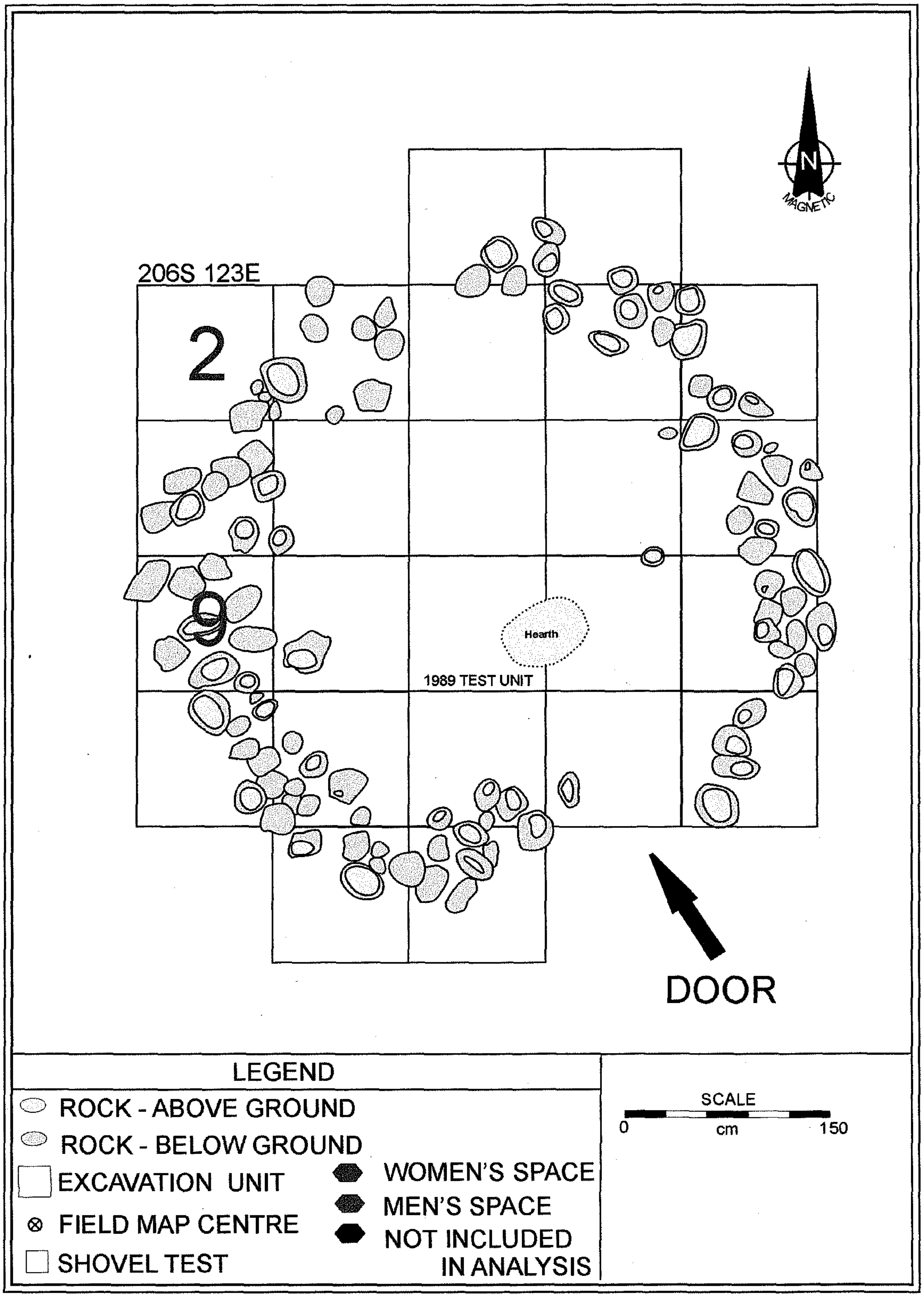

Figure C.37. EbPi-61 Stone Circle 1, Distribution of Ceramics by Gender.

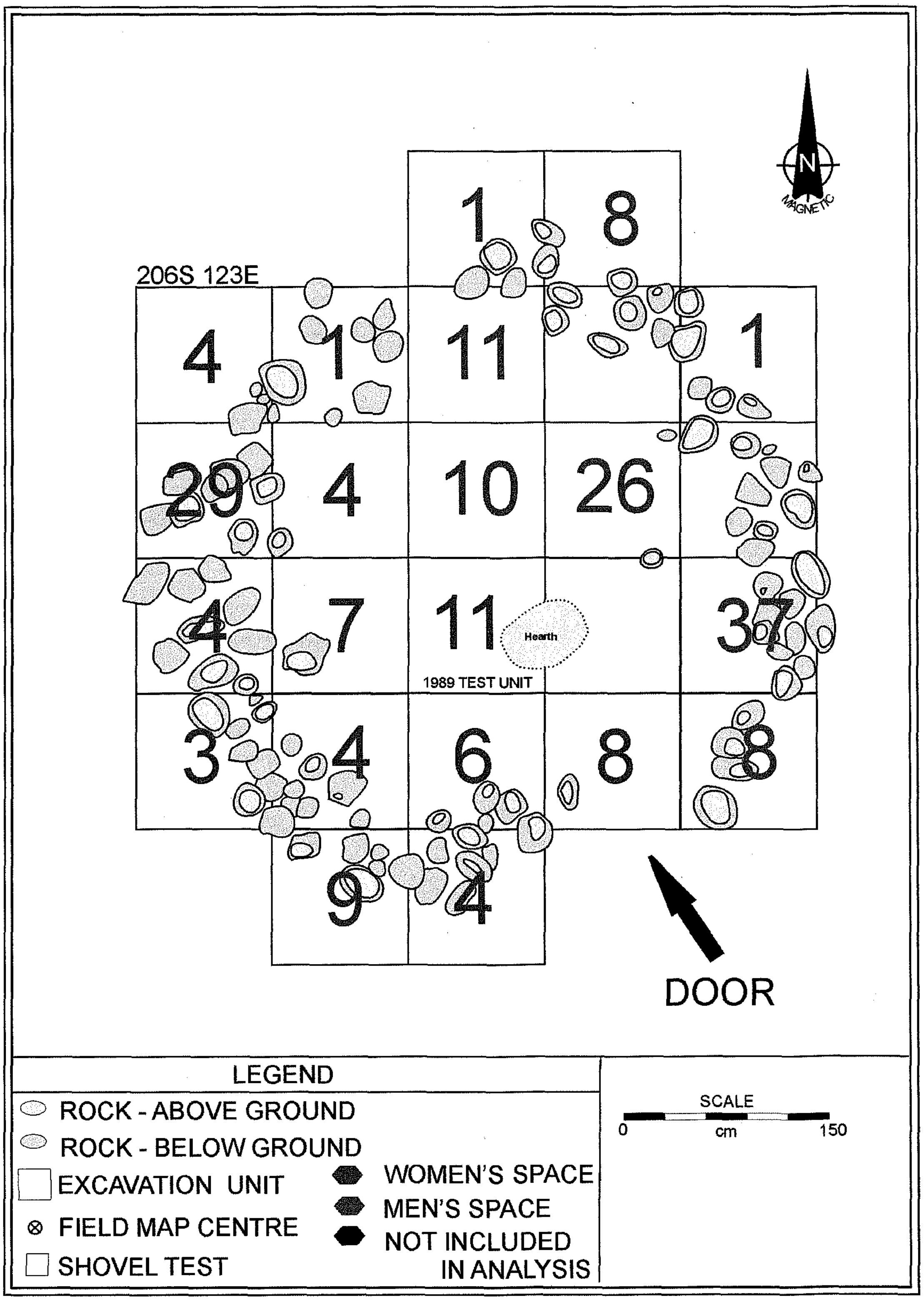

Figure C.38. EbPi-61 Stone Circle 1, Distribution of Faunal Material by Gender.

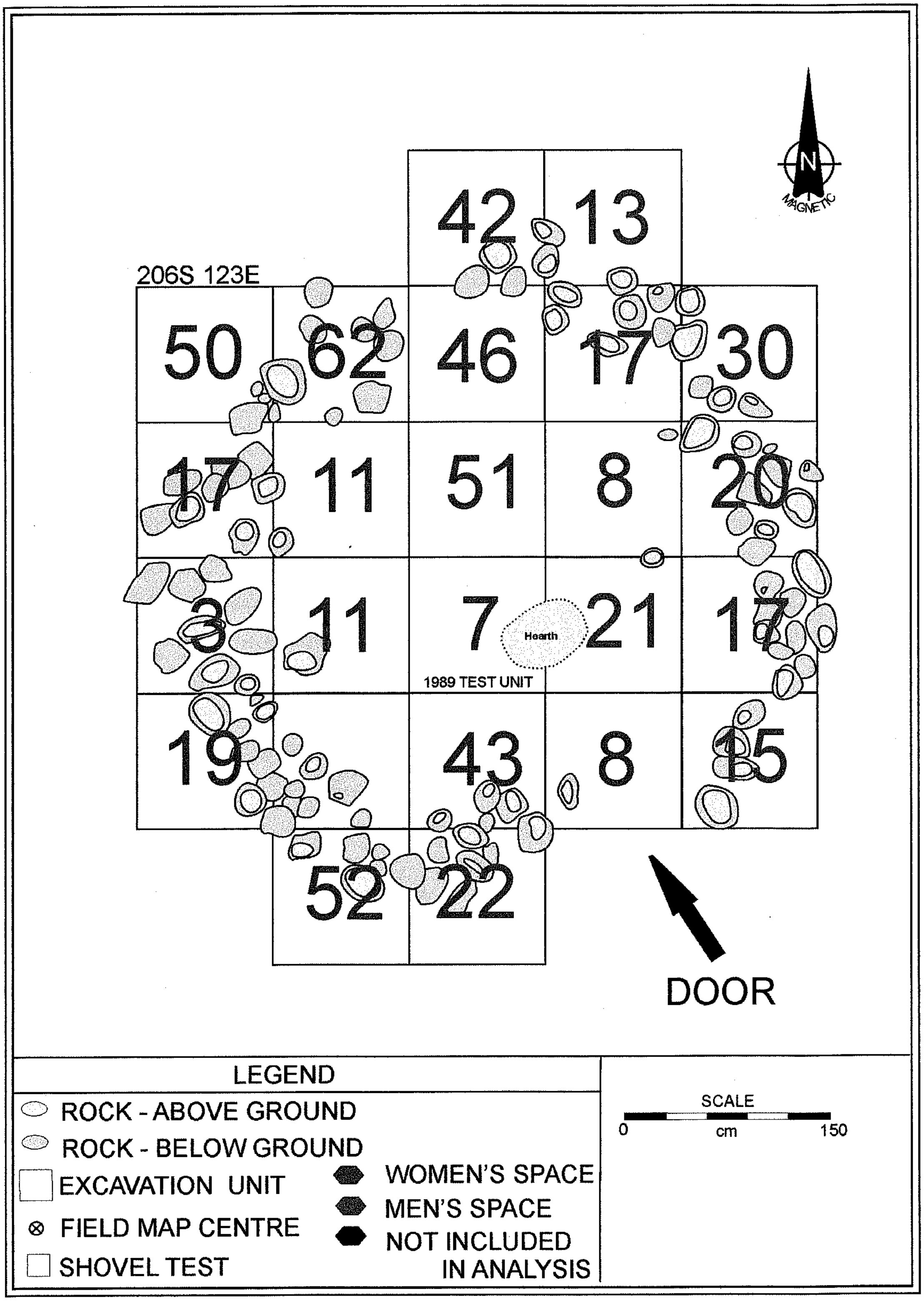

Figure C.39. EbPi-61 Stone Circle 1, Distribution of FBR by Gender.

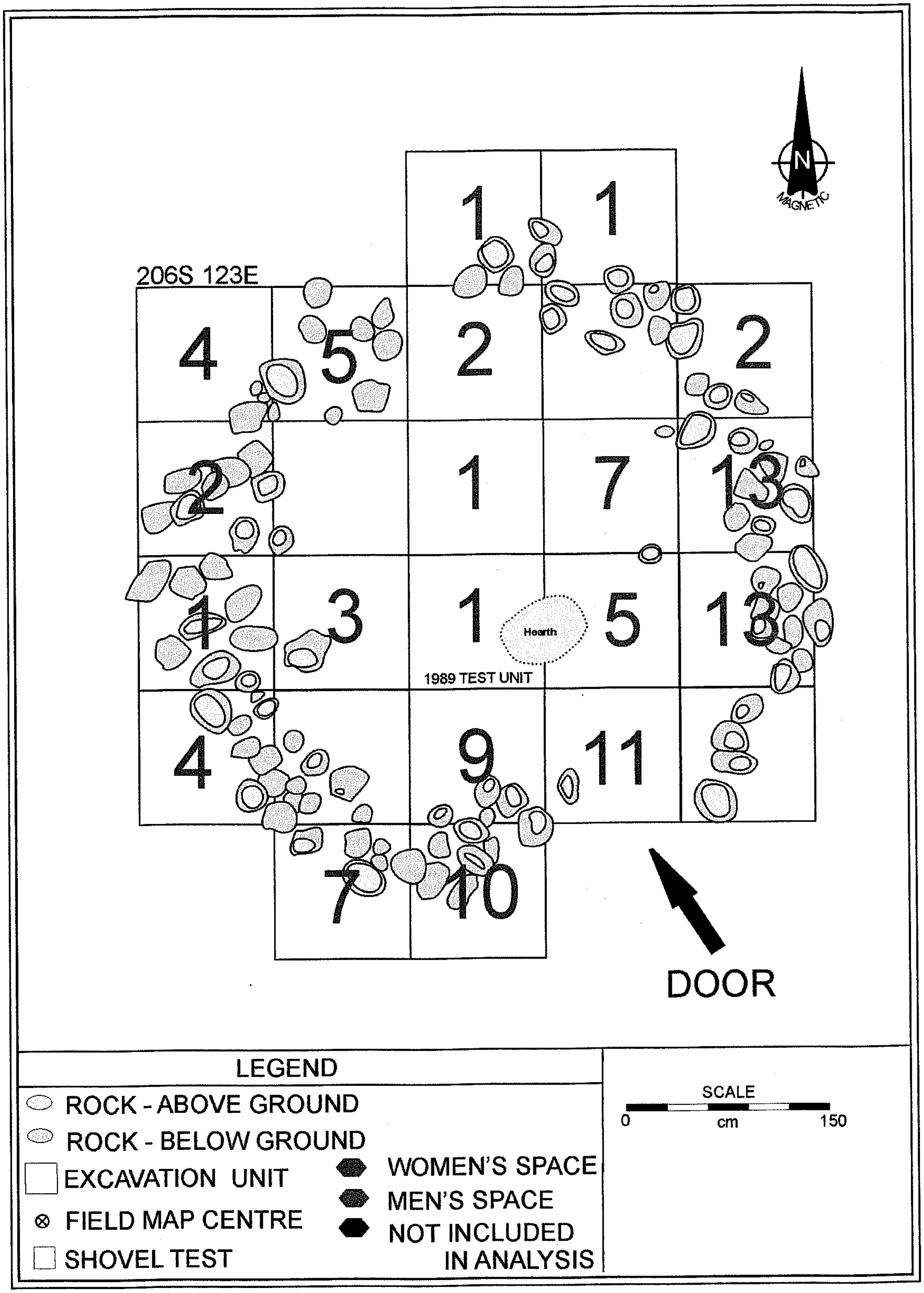

Figure C.40. EbPi-61 Stone Circle 1, Distribution of Lithics by Gender.

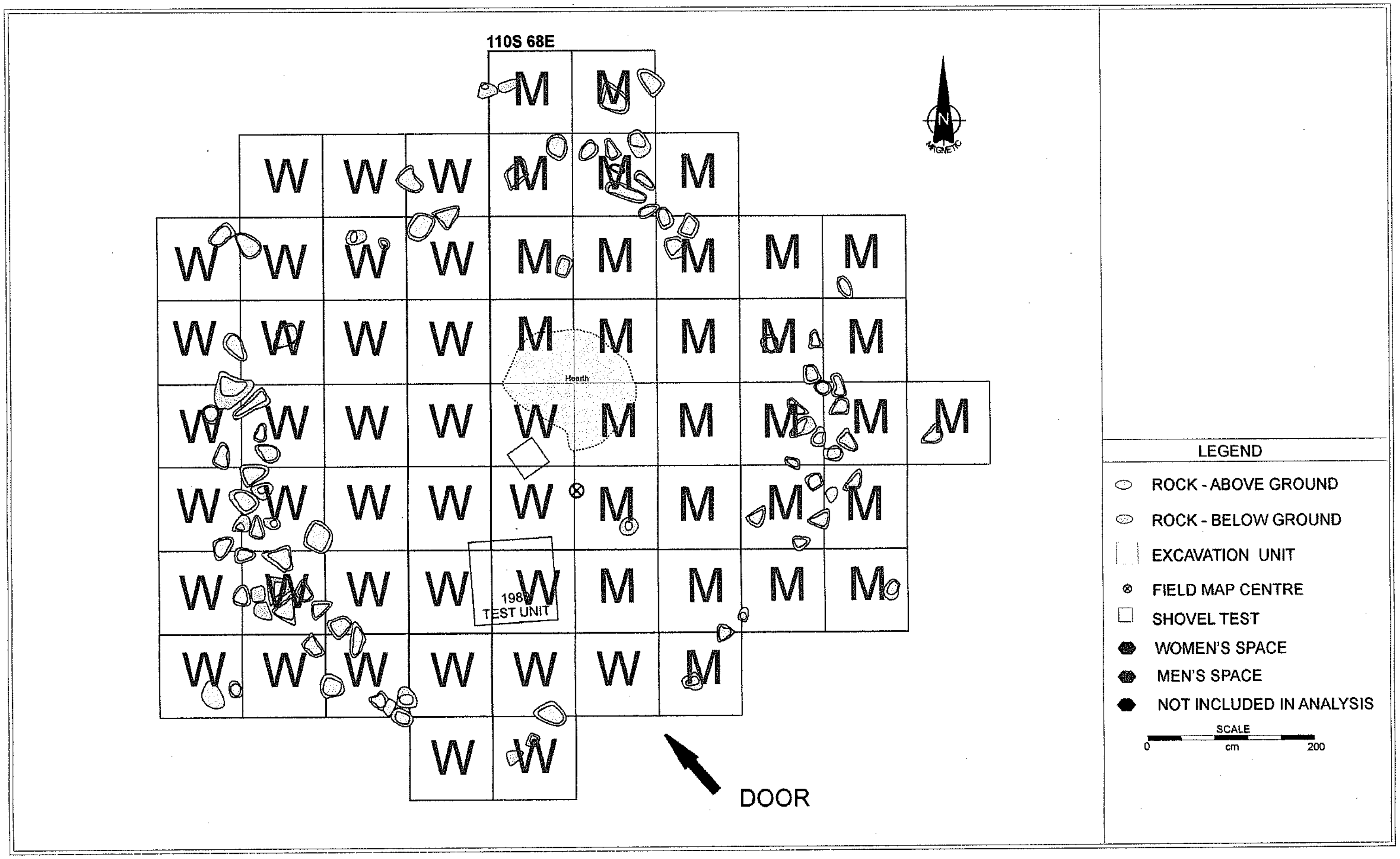

Figure C.41. EbPi-75 Stone Circle 4, Distribution by Gender.

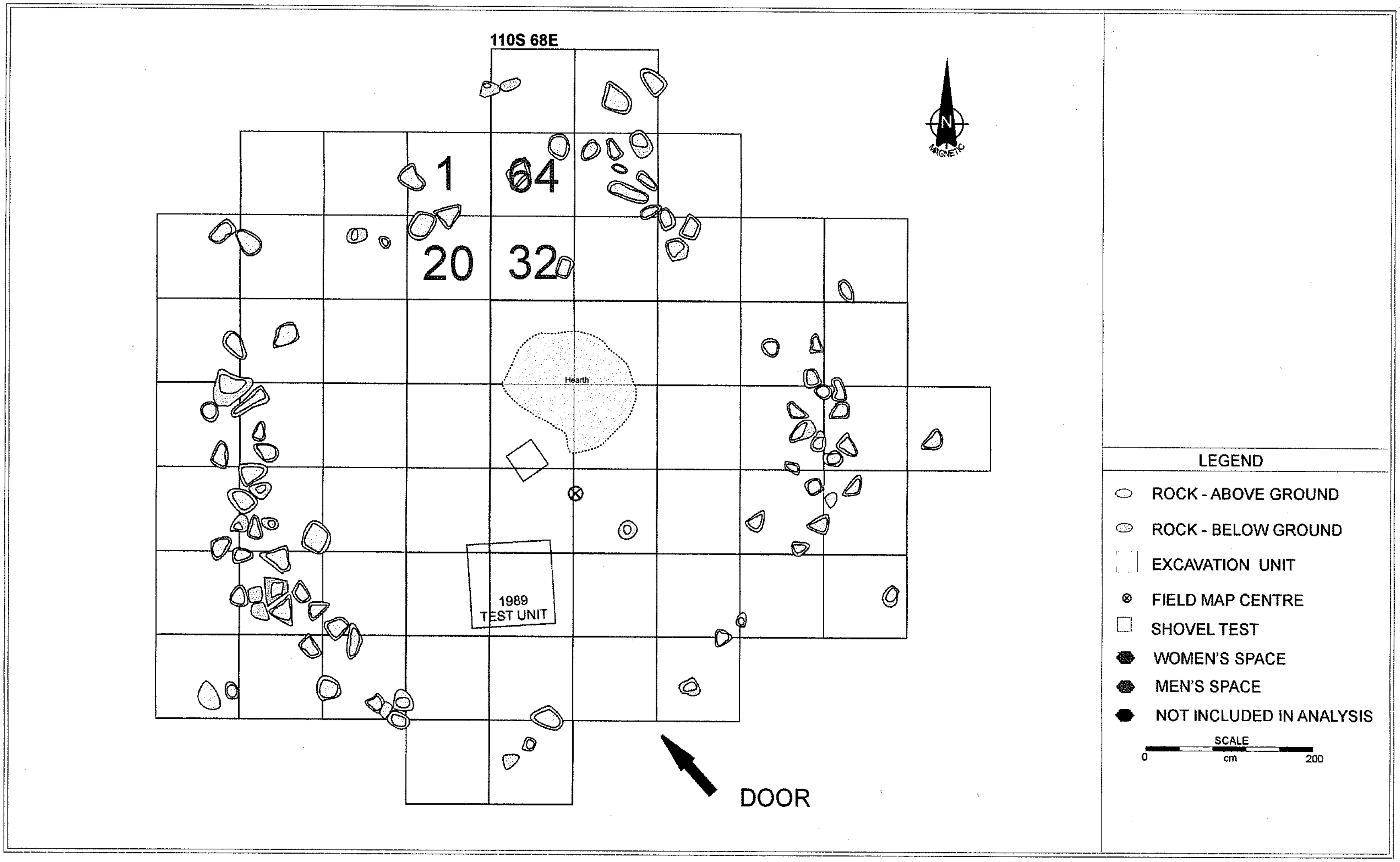

Figure C.42. EbPi-75 Stone Circle 4, Distribution of Ceramics by Gender.

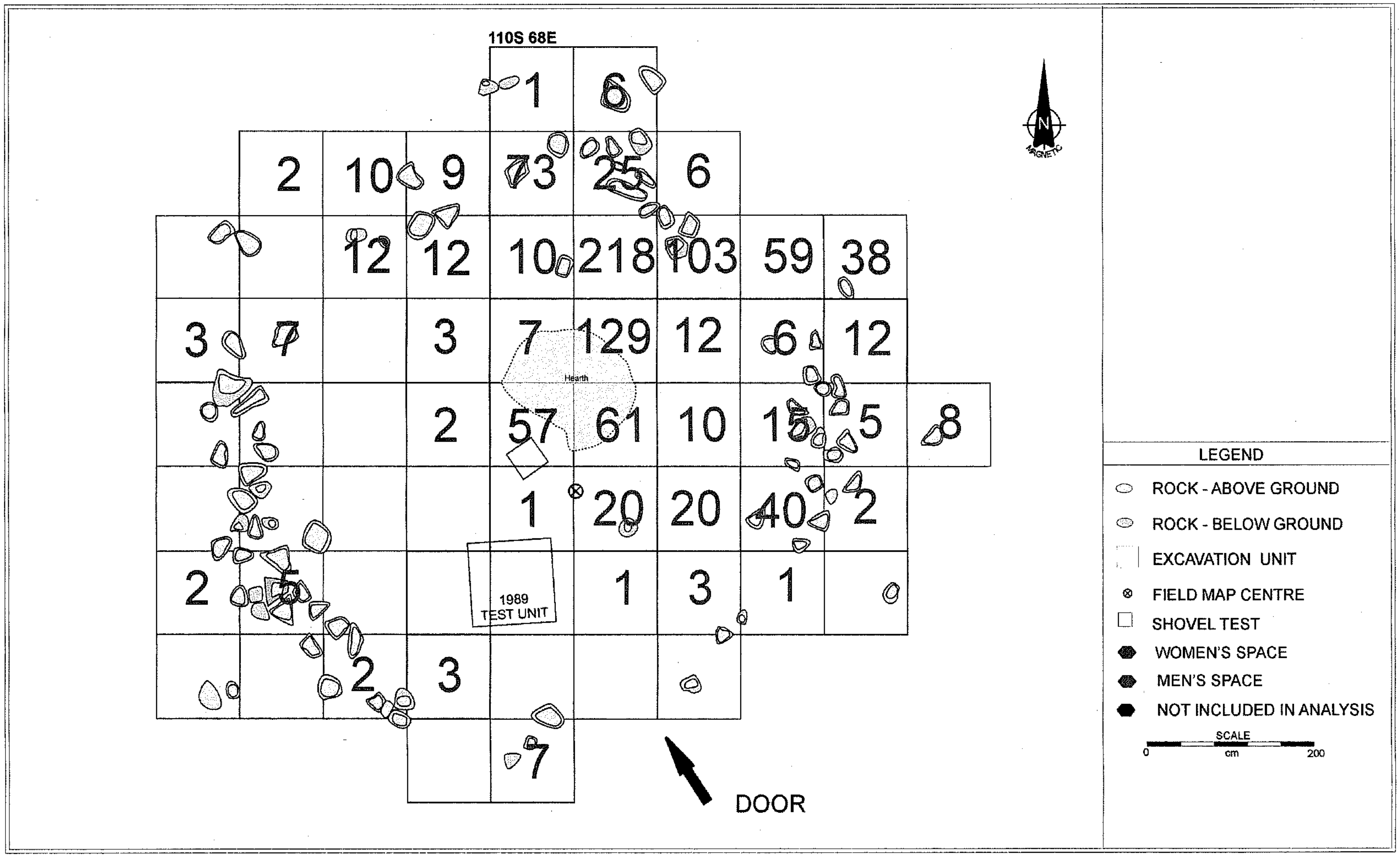

Figure C.43. EbPi-75 Stone Circle 4, Distribution of Faunal Material by Gender.

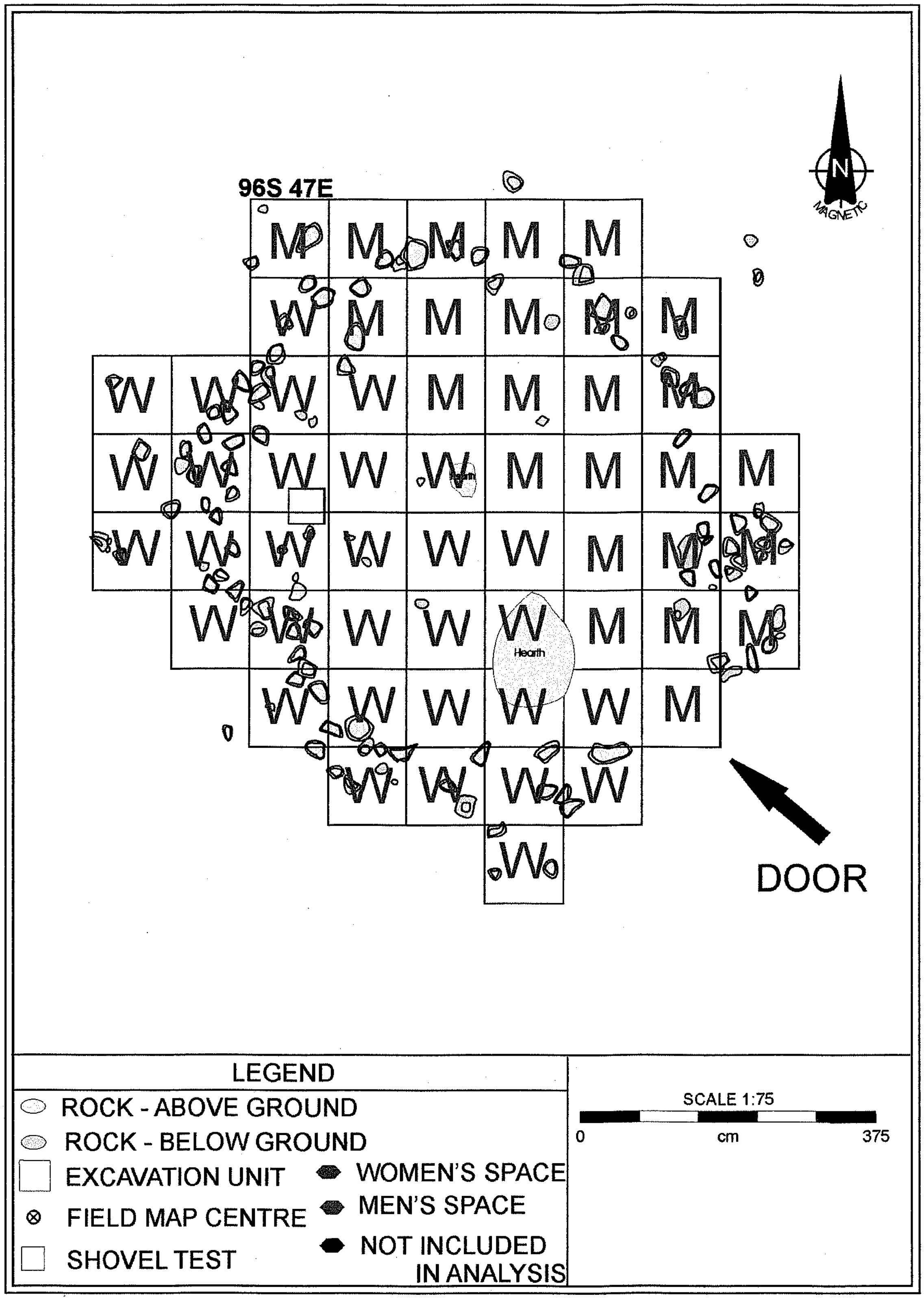

Figure C.44. EbPi-75 Stone Circle 5, Distribution by Gender.

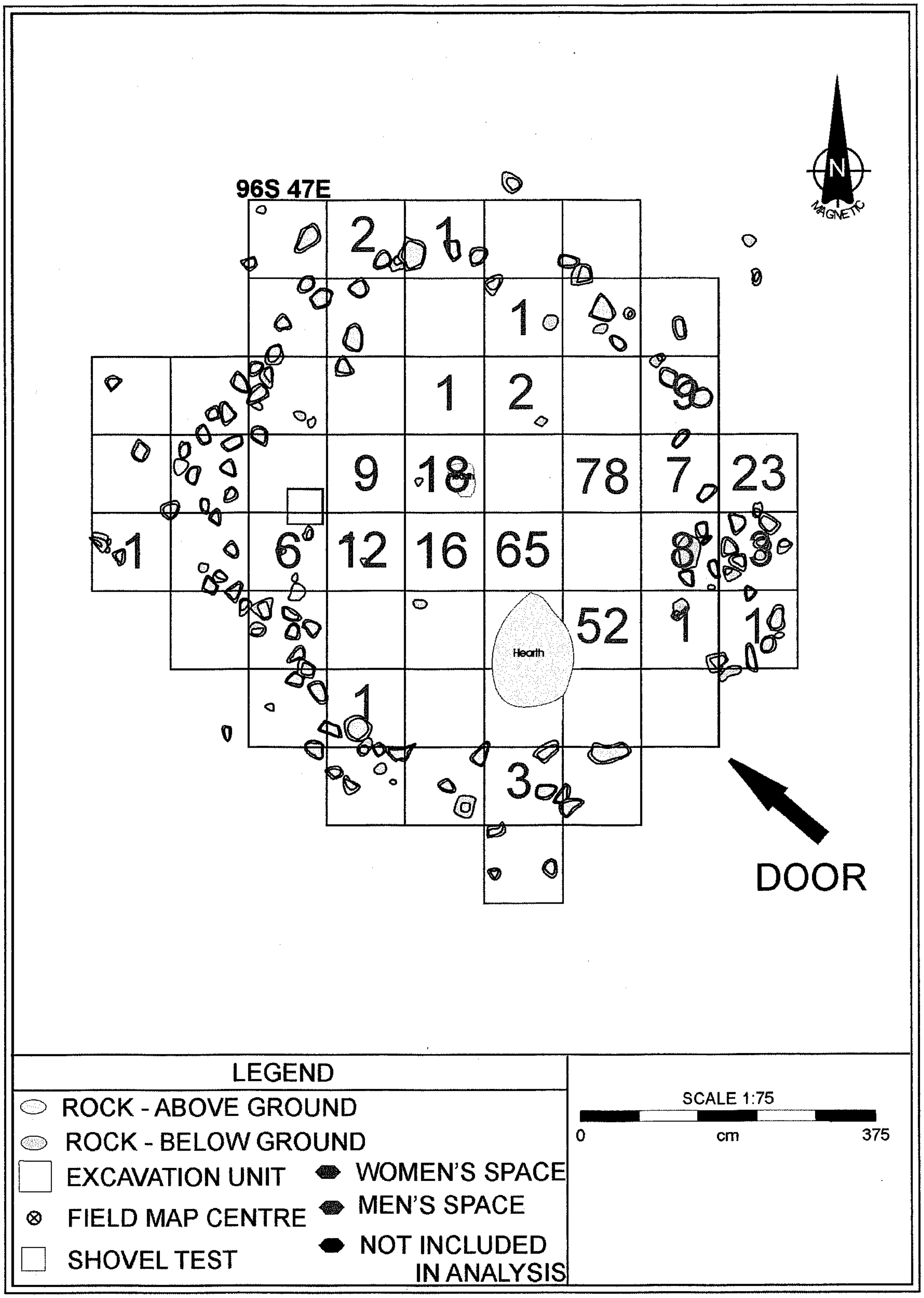

Figure C.45. EbPi-75 Stone Circle 5, Distribution of Faunal Material by Gender.

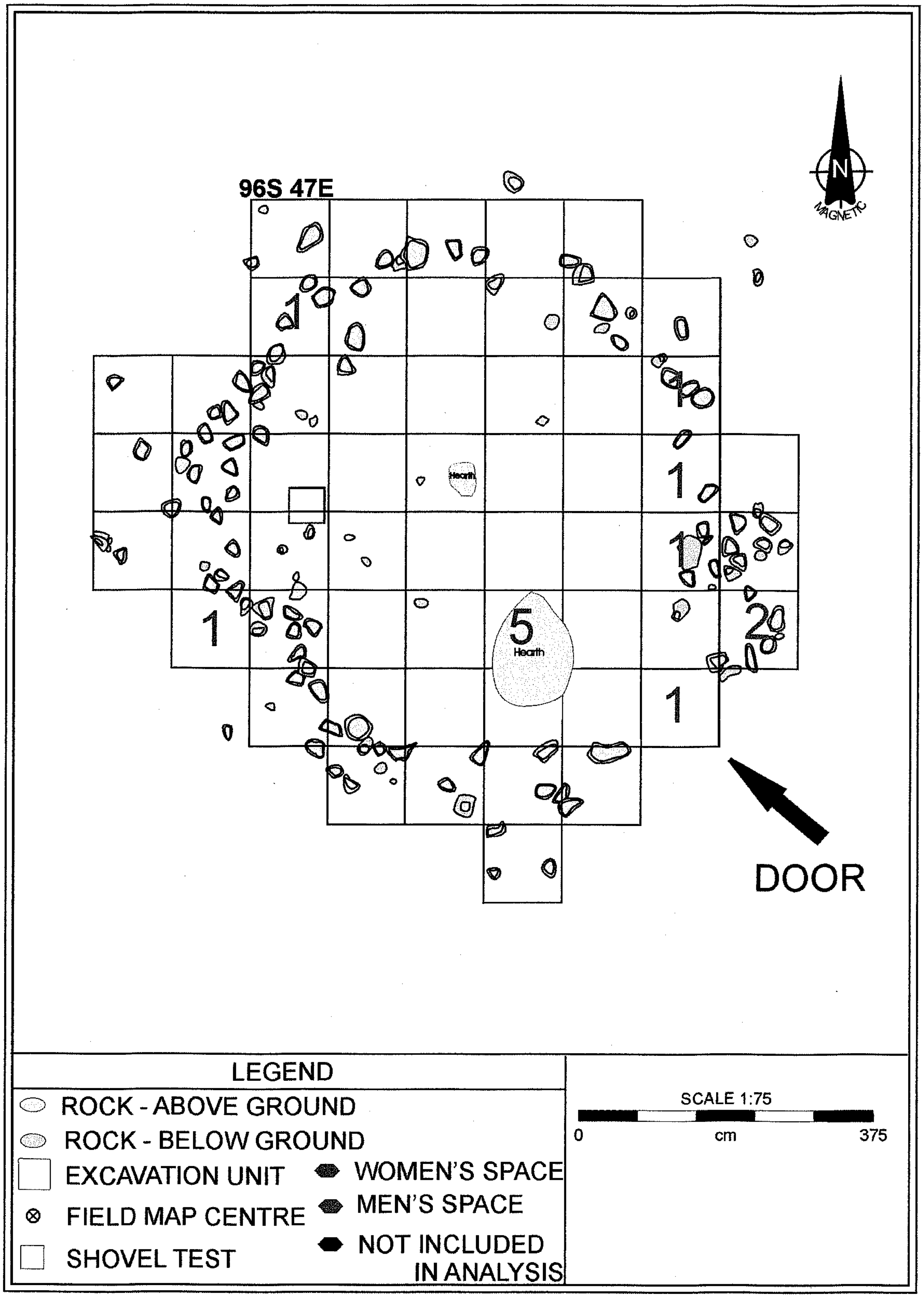

Figure C.46. EbPi-75 Stone Circle 5, Distribution of FBR by Gender.

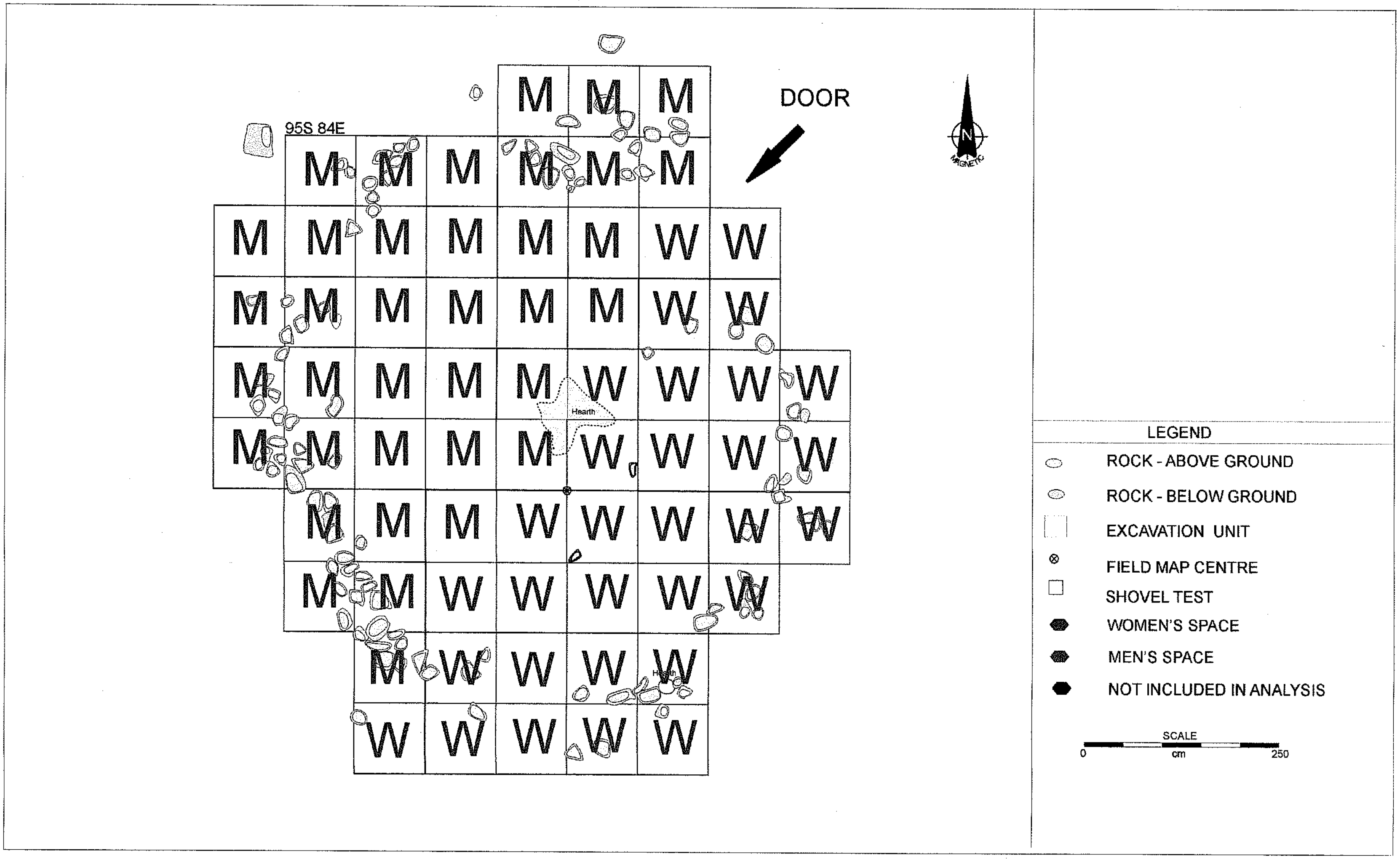

Figure C.47. EbPi-75 Stone Circle 9, Distribution by Gender.

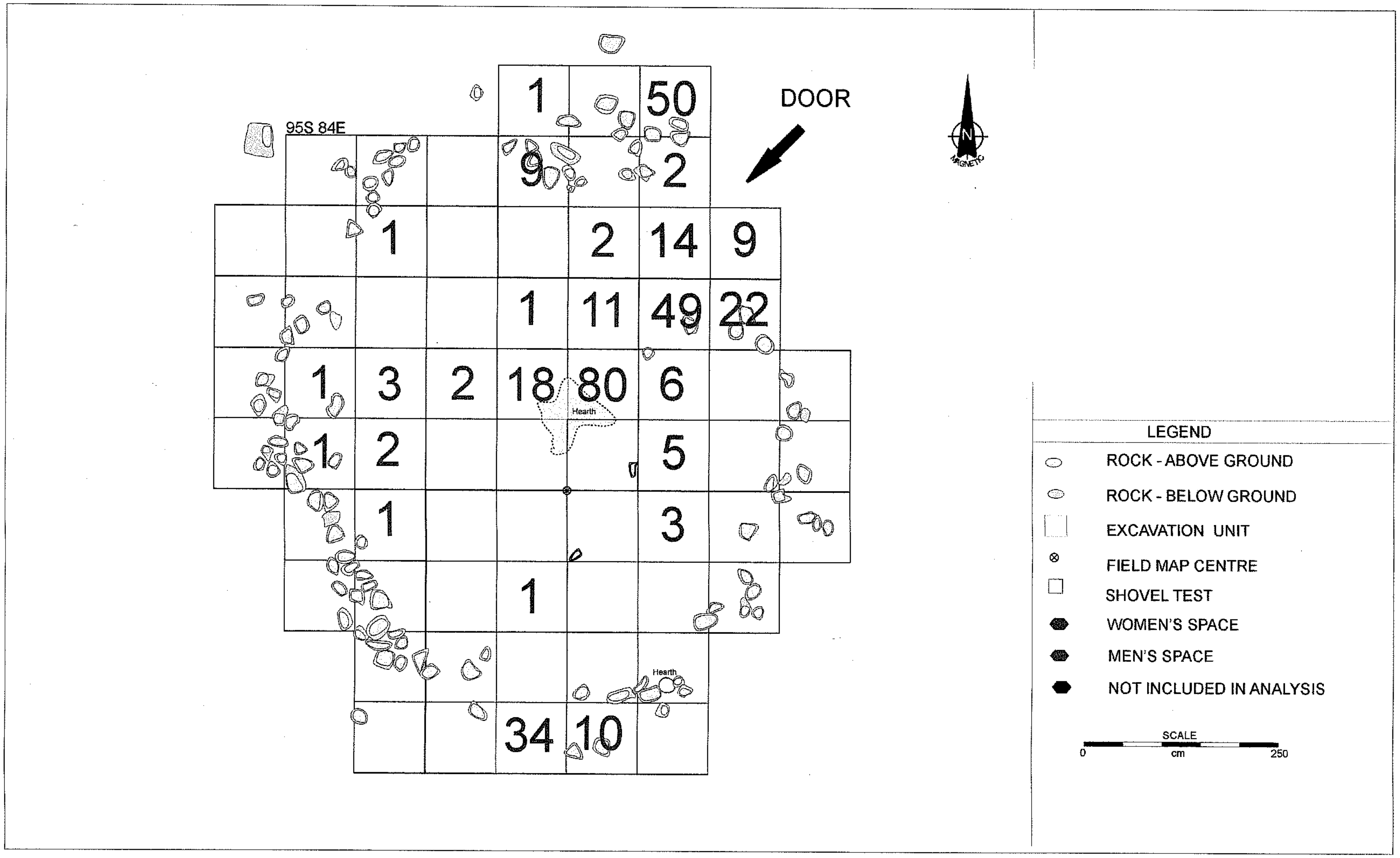

Figure C.48. EbPi-75 Stone Circle 9, Distribution of Faunal Material by Gender.

APPENDIX D

CHI-SQUARED GOODNESS OF FIT STATISTICAL ANALYSIS TABLES

Table D.1. Chi-squared Goodness of Fit Statistical Test
Feature: EbPi-51 Stone Circle 2
Artifact Class: Faunal

	Observed Results	Expected Results
Women's Space	519	548
Men's Space	577	548
$\chi^2 = 3.0693$	The null hypothesis is not rejected.	

Table D.2. Chi-squared Goodness of Fit Statistical Test
Feature: EbPi-51 Stone Circle 2
Artifact Class: FBR

	Observed Results	Expected Results
Women's Space	15	9.5
Men's Space	4	9.5
$\chi^2 = 6.3684$	The null hypothesis is rejected.	

Table D.3. Chi-squared Goodness of Fit Statistical Test
Feature: EbPi-51 Stone Circle 2
Artifact Class: Lithics

	Observed Results	Expected Results
Women's Space	26	28.5
Men's Space	31	28.5
$\chi^2 = 0.4386$	The null hypothesis is not rejected.	

Table D.4. Chi-squared Goodness of Fit Statistical Test
Feature: EbPi-51 Stone Circle 4
Artifact Class: Ceramics

	Observed Results	Expected Results
Women's Space	19	154
Men's Space	289	154
χ^2 = 236.6883	The null hypothesis is rejected.	

Table D.5. Chi-squared Goodness of Fit Statistical Test
Feature: EbPi-51 Stone Circle 4
Artifact Class: Faunal

	Observed Results	Expected Results
Women's Space	497	1198.5
Men's Space	1900	1198.5
χ^2 = 821.1969	The null hypothesis is rejected.	

Table D.6. Chi-squared Goodness of Fit Statistical Test
Feature: EbPi-51 Stone Circle 4
Artifact Class: FBR

	Observed Results	Expected Results
Women's Space	18	30.5
Men's Space	43	30.5
χ^2 = 10.2459	The null hypothesis is rejected.	

Table D.7. Chi-squared Goodness of Fit Statistical Test
Feature: EbPi-51 Stone Circle 4
Artifact Class: Lithics

	Observed Results	Expected Results
Women's Space	642	379.5
Men's Space	117	379.5
$\chi^2 = 363.1423$	The null hypothesis is rejected.	

Table D.8. Chi-squared Goodness of Fit Statistical Test
Feature: EbPi-51 Stone Circle 8
Artifact Class: Ceramics

	Observed Results	Expected Results
Women's Space	524	262
Men's Space	0	262
$\chi^2 = 524$	The null hypothesis is rejected.	

Table D.9. Chi-squared Goodness of Fit Statistical Test
Feature: EbPi-51 Stone Circle 8
Artifact Class: Faunal

	Observed Results	Expected Results
Women's Space	863	854.5
Men's Space	846	854.5
$\chi^2 = 0.1691$	The null hypothesis is not rejected.	

Table D.10. Chi-squared Goodness of Fit Statistical Test
Feature: EbPi-51 Stone Circle 8
Artifact Class: FBR

	Observed Results	Expected Results
Women's Space	30	19.5
Men's Space	9	19.5
$\chi^2 = 11.3077$	The null hypothesis is rejected.	

Table D.11. Chi-squared Goodness of Fit Statistical Test
Feature: EbPi-51 Stone Circle 8
Artifact Class: Lithics

	Observed Results	Expected Results
Women's Space	936	502
Men's Space	68	502
$\chi^2 = 750.4223$	The null hypothesis is rejected.	

Table D.12. Chi-squared Goodness of Fit Statistical Test
Feature: EbPi-52 Stone Circle 8 Interior Space
Artifact Class: Faunal

	Observed Results	Expected Results
Women's Space	340	300
Men's Space	260	300
$\chi^2 = 10.6667$	The null hypothesis is rejected.	

Table D.13. Chi-squared Goodness of Fit Statistical Test
Feature: EbPi-52 Stone Circle 8 Interior Space
Artifact Class: FBR

	Observed Results	Expected Results
Women's Space	104	109.5
Men's Space	115	109.5
$\chi^2 = 0.5525$	The null hypothesis is not rejected.	

Table D.14. Chi-squared Goodness of Fit Statistical Test
Feature: EbPi-52 Stone Circle 8 Interior Space
Artifact Class: Lithics

	Observed Results	Expected Results
Women's Space	17	24
Men's Space	31	24
$\chi^2 = 4.0833$	The null hypothesis is rejected.	

Table D.15. Chi-squared Goodness of Fit Statistical Test
Feature: EbPi-52 Stone Circle 8 Exterior Space
Artifact Class: Ceramics

	Observed Results	Expected Results
Women's Space	734	378
Men's Space	22	378
$\chi^2 = 670.5608$	The null hypothesis is rejected.	

Table D.16. Chi-squared Goodness of Fit Statistical Test
Feature: EbPi-52 Stone Circle 8 Exterior Space
Artifact Class: Faunal

	Observed Results	Expected Results
Women's Space	869	765
Men's Space	661	765
$\chi^2 = 28.2771$	The null hypothesis is rejected.	

Table D.17. Chi-squared Goodness of Fit Statistical Test
Feature: EbPi-52 Stone Circle 8 Exterior Space
Artifact Class: FBR

	Observed Results	Expected Results
Women's Space	181	190
Men's Space	199	190
$\chi^2 = 0.8526$	The null hypothesis is not rejected.	

Table D.18. Chi-squared Goodness of Fit Statistical Test
Feature: EbPi-52 Stone Circle 8 Exterior Space
Artifact Class: Lithics

	Observed Results	Expected Results
Women's Space	59	37.5
Men's Space	16	37.5
$\chi^2 = 24.6533$	The null hypothesis is rejected.	

Table D.19. Chi-squared Goodness of Fit Statistical Test
Feature: EbPi-52 Stone Circle 8 Interior/ Exterior Space
Artifact Class: Ceramics

	Observed Results	Expected Results
Women's Space	738	380
Men's Space	22	380
$\chi^2 = 674.5474$	The null hypothesis is rejected.	

Table D.20. Chi-squared Goodness of Fit Statistical Test
Feature: EbPi-52 Stone Circle 8 Interior/ Exterior Space
Artifact Class: Faunal

	Observed Results	Expected Results
Women's Space	1209	1065
Men's Space	921	1065
$\chi^2 = 38.9408$	The null hypothesis is rejected.	

Table D.21. Chi-squared Goodness of Fit Statistical Test
Feature: EbPi-52 Stone Circle 8 Interior/ Exterior Space
Artifact Class: FBR

	Observed Results	Expected Results
Women's Space	285	299.5
Men's Space	314	299.5
$\chi^2 = 1.4040$	The null hypothesis is not rejected.	

Table D.22. Chi-squared Goodness of Fit Statistical Test
Feature: EbPi-52 Stone Circle 8 Interior/ Exterior Space
Artifact Class: Lithics

	Observed Results	Expected Results
Women's Space	76	61.5
Men's Space	47	61.5
$\chi^2 = 6.8374$	The null hypothesis is rejected.	

Table D.23. Chi-squared Goodness of Fit Statistical Test
Feature: EbPi-53 Stone Circle 1
Artifact Class: Faunal

	Observed Results	Expected Results
Women's Space	157	141.5
Men's Space	126	141.5
$\chi^2 = 3.3958$	The null hypothesis is not rejected.	

Table D.24. Chi-squared Goodness of Fit Statistical Test
Feature: EbPi-53 Stone Circle 1
Artifact Class: FBR

	Observed Results	Expected Results
Women's Space	5	12
Men's Space	19	12
$\chi^2 = 8.1667$	The null hypothesis is rejected.	

Table D.25. Chi-squared Goodness of Fit Statistical Test
Feature: EbPi-53 Stone Circle 1
Artifact Class: Lithics

	Observed Results	Expected Results
Women's Space	37	48.5
Men's Space	60	48.5
$\chi^2 = 5.4536$	The null hypothesis is rejected.	

Table D.26. Chi-squared Goodness of Fit Statistical Test
Feature: EbPi-53 Stone Circle 6
Artifact Class: Faunal

	Observed Results	Expected Results
Women's Space	30	27.5
Men's Space	25	27.5
$\chi^2 = 0.4545$	The null hypothesis is not rejected.	

Table D.27. Chi-squared Goodness of Fit Statistical Test
Feature: EbPi-53 Stone Circle 6
Artifact Class: Lithics

	Observed Results	Expected Results
Women's Space	12	9
Men's Space	6	9
$\chi^2 = 2$	The null hypothesis is not rejected.	

Table D.28. Chi-squared Goodness of Fit Statistical Test
Feature: EbPi-61 Stone Circle 1
Artifact Class: Ceramics

	Observed Results	Expected Results
Women's Space	11	5.5
Men's Space	0	5.5
$\chi^2 = 11$	The null hypothesis is rejected.	

Table D.29. Chi-squared Goodness of Fit Statistical Test
Feature: EbPi-61 Stone Circle 1
Artifact Class: Faunal

	Observed Results	Expected Results
Women's Space	94	98
Men's Space	102	98
$\chi^2 = 0.3265$	The null hypothesis is not rejected.	

Table D.30. Chi-squared Goodness of Fit Statistical Test
Feature: EbPi-61 Stone Circle 1
Artifact Class: FBR

	Observed Results	Expected Results
Women's Space	305	292.5
Men's Space	280	292.5
$\chi^2 = 1.0684$	The null hypothesis is not rejected.	

Table D.31. Chi-squared Goodness of Fit Statistical Test
Feature: EbPi-61 Stone Circle 1
Artifact Class: Lithics

	Observed Results	Expected Results
Women's Space	57	51
Men's Space	45	51
$\chi^2 = 1.4118$	The null hypothesis is not rejected.	

Table D.32. Chi-squared Goodness of Fit Statistical Test
Feature: EbPi-75 Stone Circle 4
Artifact Class: Ceramics

	Observed Results	Expected Results
Women's Space	21	58.5
Men's Space	96	58.5
$\chi^2 = 48.0769$	The null hypothesis is rejected.	

Table D.33. Chi-squared Goodness of Fit Statistical Test
Feature: EbPi-75 Stone Circle 4
Artifact Class: Faunal

	Observed Results	Expected Results
Women's Space	137	514
Men's Space	891	514
$\chi^2 = 553.0311$	The null hypothesis is rejected.	

Table D.34. Chi-squared Goodness of Fit Statistical Test
Feature: EbPi-75 Stone Circle 5
Artifact Class: Faunal

	Observed Results	Expected Results
Women's Space	131	160
Men's Space	189	160
$\chi^2 = 10.5125$	The null hypothesis is rejected.	

Table D.35. Chi-squared Goodness of Fit Statistical Test
Feature: EbPi-75 Stone Circle 5
Artifact Class: FBR

	Observed Results	Expected Results
Women's Space	7	6.5
Men's Space	6	6.5
$\chi^2 = 0.0769$	The null hypothesis is not rejected.	

Table D.36. Chi-squared Goodness of Fit Statistical Test
Feature: EbPi-75 Stone Circle 9
Artifact Class: Faunal

	Observed Results	Expected Results
Women's Space	233	169
Men's Space	105	169
$\chi^2 = 48.4734$	The null hypothesis is rejected.	